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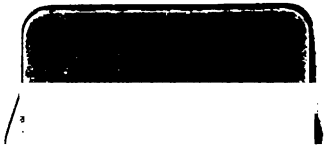

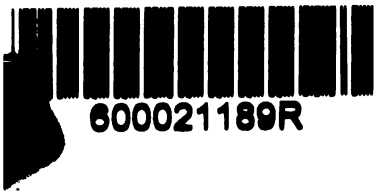
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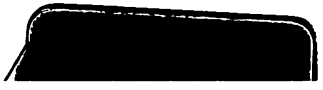

THE

MERCHANTS' HANDBOOK

OF

MONEY, WEIGHTS AND MEASURES,

WITH THEIR BRITISH EQUIVALENTS.

BY

W. A. BROWNE, LL.D.

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PREFACE TO THE THIRD EDITION.

THIS Treatise, which was originally based upon information furnished by Foreign Ministers and Consuls in the United Kingdom, and English Ministers and Consuls abroad, is intended to serve as a book of reference for those engaged in commerce at home and abroad, as well as for those who travel in different countries either on business or for the sake of health or pleasure.

It shows, under each country, the denominations of money used in keeping accounts, with their equivalents in British sterling money. It gives the Gold, Silver, and Copper or Bronze Coins, and the Paper Money, or Bank Notes, forming the currency of each country; and also the Weights and Measures with their Metric and British Imperial equivalents.

It will form, it is hoped, a convenient text-book for the use of those candidates for appointments under the Crown, from whom a knowledge of the money, weights, and measures of different countries is required as a compulsory subject of examination before the Civil Service Commissioners.

In the preparation of a work like this, based upon computations and calculations, the results alone of which appear in the work, it is hardly possible to avoid some errors in figures. I have noted some of these in the "Errata;" and I shall feel obliged to anyone who may take the trouble to point out to me any inaccuracies or omissions in the work.

W. A. B.

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PART I.

MONEY.

GENERAL OBSERVATIONS.

MONEY or the "currency" is the standard measure of the value of commodities and the medium of exchanging them one for another. It is called a measure of value because by it the price of everything bought and sold is measured, and the value of future payments is regulated. The word money comes to us from the Latin *moneta*, a surname of Juno, in whose temple at Rome, money was coined. In its original sense money meant stamped coin, and afterwards anything that takes the place of stamped coin in buying or selling, and serves as its equivalent, such as bank notes.

The earliest record of money, as a medium of exchange, is the purchase (about B.C. 1859) of the field and cave of Machpelah, by Abraham, from Ephron, the Hittite, for "400 shekels of silver current *money* with the merchant."—(Gen. xxiii. 16.) Homer speaks of brass money as existing in 1184 B.C. Herodotus states (I. 94) that the Lydians, at Ægina, in B.C. 183, were the first who coined gold and silver money, but the Parian chronicle attributes the coinage of both gold and silver money to Pheidon, of Argos, B.C. 895.

Anything which everybody consents to use as a medium of exchange, and a measure of value in buying and selling, may be used as money. The members of the same community in buying and selling among themselves may use as money anything in which they all have entire confidence. But the commodity selected must possess all the constituents of value. It must be *limited in supply*, *useful* and *transferable*. If a thing selected to serve as money can be arbitrarily increased or diminished, the prices of all things bought and sold by it will *rise* with its increase and fall with its diminution in quantity.

Prices are said to rise when more money is required to pay for a given quantity of any article, and to fall when a smaller amount of money pays for the same quantity. In different stages of civilization many and various articles have at different times been used as money. Elephant's tusks, whale's teeth, furs, sheep and cattle, small white glossy shells called cowries, tobacco, silk, hides, corn, cocoa-nuts, leather, and iron rings, salt, copper, silver, nickel, and gold have been so used.

As money performs different functions, the various materials that have been used as money possess in different degrees the qualities best adapted to those functions.*

Gold and silver—the precious metals, as they are called—are used as money in almost all parts of the world. This preference is given to them because they possess, in a high degree, the requisite conditions of a medium of exchange and a measure of value; those namely of usefulness for other purposes, limited supply, transferableness, portability, divisibility, and durability. In other words, the precious metals command universal confidence in their value, they are easily carried, and they cannot be arbitrarily increased or diminished in quantity. They can be readily passed on from one person to another, they are neither too minute nor too heavy, they are capable of division without loss of value, so that when divided the sum of the value of all the parts is equal to the value of the whole, and they are not readily destroyed. In early ages gold and silver, usually in ingots, circulated by weight; and the denominations of money were the same as those of weight. Possibly even as early as the Trojan war gold was used as a medium of exchange or a common measure of commodities. In the Homeric poems an ox seems to approximate to a standard of value, and gold is mentioned as an article of stored wealth, although it is not spoken of as a measure of other commodities. Mr. Gladstone† thinks that he finds the germ of the practice of using gold as money in the payment of the judge's fee or prize in gold on the shield of Achilles.‡ Gold dust by weight is the primitive form of gold money. The gold coins of Miletus, in Asia Minor, which were probably made about the year B.C. 800, are supposed to be the earliest gold coins. The gold darics of Persia began to be issued about the year 538 B.C., and the Sicilians established a gold coinage

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* Professor Stanley Jevon's "Money and the Mechanism of Exchange."

† Juventus Mundi, p. 446.

‡ Iliad XXIII. 702-5. Iliad XXI. 79. Od. I. 431.

as early as 400 B.C. The Romans first used gold coins in B.C. 206. The modern gold coinage of Europe was commenced by the Florentines in A.D. 1252. Some of the earliest specimens of money are lumps of native copper, used by the Etruscans, and one of these may be seen in the hand of a skeleton in the museum at Bologna. In the reign of Romulus, and down to the time of Servius Tullius, the Romans used native copper (*aes rude*), by weight, as a circulating medium. The square "As," in copper, was issued in the reign of Servius Tullius, B.C. 578, and the circular "As" about B.C. 385. As commerce extended the inconvenience of weighing gold and silver, and testing their purity, led to the introduction of *coins*. Coins are pieces of metal, usually gold, silver, bronze, or nickel, having designs impressed upon their surfaces as a guarantee of their purity and weight. Æschylus mentions that the earliest sign impressed on money was the figure of an ox, the sign being probably intended to represent the animal's equivalent value in the metal.* Coins became the medium of exchange and the measure of value among the members of the same political community; but for transactions between different political communities bars or ingots of gold and silver, estimated by weight, are still occasionally used.

Pure gold and silver are too soft to serve as media of exchange, and for that reason they are *usually alloyed*, that is, mixed with a small proportion of harder and less valuable metals.

The quantity of *alloy* varies in different countries, and in all cases the *standard* of a coin, that is, its degree of purity or fineness, as well as its weight, must be taken into account. The value of the alloy is always disregarded in estimating the worth of a coin.

A standard unit of value is a fixed weight of gold or silver or copper, or some other substance selected as the measure of value and the medium of exchange. In some countries gold is the unit and standard measure of value and medium of exchange, while in many others the standard is silver. A country is said to have a double standard of value and medium of exchange when gold and silver are both legal tenders to unlimited amounts, their relative values being fixed at a definite rate; as, for instance, 15½ ounces of silver to one ounce of gold.

Countries, like France, Belgium, Switzerland, Italy, Greece,

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* Aes, Ag. 37. "Juventus Mundi," 535.

Roumania, Peru, Ecuador, and New Grenada, in which both gold and silver are legal tenders to unlimited amounts, are said to have *a double standard of value;* that is, a debt may be paid in either gold or silver at the option of the debtor, and the debtor selects his medium according to the relative value of gold and silver; when silver is cheap he will elect to pay in silver, and when gold is cheap he adopts it as the medium of payment.

A double standard of value is open to the objection that as gold and silver fluctuate in price like other marketable commodities, when the price of one of them is raised disproportionately above that of the other, the undervalued metal is driven out of circulation, and is exported because it will realise a higher price in other countries in proportion to the other metal.

MONEYS OF ACCOUNT.

"Moneys of account" are the denominations and divisions of money in which accounts are kept. The moneys of account may either be identical with the current coins, or may bear definite proportions to them. The current coins should be easily expressed in terms of the unit of the moneys of account.

INTRINSIC AND NOMINAL VALUES OF COINS.

The value of the pure metal contained in a coin is called its intrinsic value, and its nominal value is its value in exchange for other coins.

LEGAL TENDER.

By legal tender is meant such moneys (and in such amounts) as a debtor may legally offer in payment of what he owes.

STANDARD COINS AND TOKEN COINS.

The metallic currency of a country usually consists of *standard coins* and *token coins*. The nominal or current value of standard coins, is equal to the value of the metal contained in them; but the nominal, or current value of token coins, is more than their intrinsic or metallic value.

EXCHANGE.

Exchange signifies the giving or receiving, in return for a sum of money in the currency of one country, an equivalent sum in the currency of another country. The term *Exchange* is used in two senses by merchants. It denotes the securities (Bills of Exchange) by means of which debts to creditors in distant countries are liquidated without the transmission of gold and silver. It also denotes the varying price (course of exchange) of such securities in the market.

BILLS OF EXCHANGE.

Bills of Exchange are written orders for the payment of money at some date fixed or ascertainable by the Bill. They are written documents, by means of which traders settle their liabilities without the transmission of gold and silver.

The person who gives the order is called the Drawer; the person to whom the bill is addressed is called the Drawee or (when he has written his name across the bill) the Acceptor; and the person who has the bill in his possession is called the Holder.

The holder of a bill, when he transfers it, writes his name across the back of it. This is called *endorsing* it. Thus the holder in transferring a bill becomes the Endorser, and the person to whom he transfers it is called the Endorsee.

A Bill may pass in this way through the hands of any number of persons, and each of such persons is conjointly responsible with the other endorsers, and with the drawer and acceptor of the bill for payment of the amount named in it.

Endorsement is the signature of the person who transfers the bill. Special endorsement is an order from the endorser making the bill payable to the order of the holder.

The periods for which bills are drawn vary with the purposes of the bills, and the usages of different places. Some are drawn at sight, some at so ,many days. The term *usance* denotes the usual or customary period for which bills are drawn at one place upon another.

The term Effective is used in Bills of Exchange to indicate *coin* or specie as distinguished from paper money.

Bills of Exchange are classed as *Inland* and *Foreign*. An Inland Bill of Exchange is one drawn and payable in the same country. A Foreign Bill of Exchange is a document autho-

aising the payment in a foreign country of a sum of money specified in the Bill; for instance, a Bill on Paris, wherever drawn, is, as regards London, a Foreign Bill.*

The amount of Foreign Money to be paid to the person in whose favor the Bill is drawn is fixed by the Bill, but the price of the Bill, that is, the sum of money that is to be given for it in the currency of the country where the Bill is drawn, is perpetually fluctuating. The constant variations in the price of Bills of Exchange depend upon the supply of Bills in the market compared with the demand for them, and upon the comparative value of the currencies of different countries.

The phrase NOMINAL EXCHANGE refers to the value of the currency in which Bills of Exchange are to be paid, as compared with the money in which they are bought; and REAL EXCHANGE has reference to their abundance or scarcity compared with the demand for them.

The relative intrinsic value of the currencies of different countries depends upon the quantity of pure gold or pure silver contained in those currencies, the value of the alloy being always disregarded.

The PAR OF EXCHANGE between two countries using the same metal as their standard of value, is that sum of money of either country which contains an exactly equal weight of gold or silver of the same purity; or, in other words, it is the equivalent intrinsic value of a given unit of the currency of one country estimated in the currency of another country, both using the same metal as a standard.

The relative value of gold and silver is liable to slight fluctuations; and when two countries use, the one gold and the other silver, there can be no invariable *Par of Exchange* between those countries. In such cases an *approximate par* is calculated from the average price of gold and silver in the market. Hence we have a third definition of the PAR OF EXCHANGE: it is the fixed standard *rate* of exchange between different countries, and is determined by the weight, purity, and market prices of the precious metals in the coinage of the respective countries.

The proportionate or relative value of gold and silver has varied at different periods. Thus, one ounce of gold was equal to 13½ ounces of silver in ancient times; it was equal to 14½ ounces of silver towards the close of the Old Roman Empire of

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* Bills drawn in a foreign country on London are sometimes, but incorrectly called, in London, Foreign Bills.

the West; it was equal to 16 ounces of silver during the Middle Ages, and, down to the 15th century, it was equal to 10½ or 11 ounces of silver after the discovery of the American gold fields; it was equal to 15 ounces of silver at the end of the 17th century and during the 18th century; it was equal to 15½ ounces of silver at the end of the 18th and during the first half of the 19th century.

INLAND EXCHANGE is the liquidation of liabilities by means of Bills of Exchange between members of the same political community.

FOREIGN EXCHANGE is the remittance of Bills to foreign countries in discharge of liabilities.

In Foreign Exchanges when a fixed sum, such as £1 sterling, is exchanged for a variable sum expressed in other denominations, as francs and centimes, the fixed sum is called the *certain* or *fixed price*, and the variable, the *uncertain* or *variable price*. The place whose money is reckoned at the *fixed price* is said to *receive*, and the other is said to *give* the variable prices. For example, France, Belgium, Switzerland, and Italy *give* a variable number of francs or lire and centimes for £1 sterling, and America, Russia, Spain, and Portugal *receive* a variable number of *pence* sterling for a dollar, a rouble, a peseta, or a milreis.

When the rate of exchange between two places is high, it is more favourable to the place that *receives* the *variable* price; the lower the rate of exchange the more it is in favour of the place that *gives* the variable price, and *vice versâ*.

Where the quotations are in foreign money per pound sterling, the higher the exchange the more favourable it is for England; thus, when the exchange in Paris is 25 francs 75 centimes per £1, it is better for buyers of bills than if it were 25 francs 20 centimes. Hence, when money is easy these rates are generally low, *i.e.*, against England; but when money is dear, they are higher, *i.e.*, in favour of England.

Where the Exchanges are quoted in English money for foreign, as is the case with Russia, Portugal, Spain, and America, the higher the rate the more unfavourable it is for England.

BALANCE OF TRADE.

When two countries are each other's customers in buying and selling, and the one *exports* goods to the amount of the value of the goods she imports, the transactions balance, and are settled by Bills of Exchange: the bills drawn by the merchants *exporting* are exactly equal to those drawn by the merchants *importing*, and the transmission of specie is unnecessary. *But when* a country imports goods beyond the

amount of her exports a balance—that is, the excess of the imports over the exports—remains to be paid for. This is called the *balance of trade.** To pay for this balance a merchant in the debtor country, rather than transmit specie, will give for a Bill of Exchange on the creditor country more than the sum for which it is drawn. On the other hand, in the creditor country, when bills are abundant, the holders of such bills will be satisfied to receive for them a little less than the amount specified. When, therefore, there is a balance of imports to be paid for to a foreign country, foreign Bills of Exchange will be at a premium, and when there is a balance of exports, foreign bills will be at a discount; but the amount of this premium or discount will seldom exceed the expense of transmitting gold and silver.

COURSE OF EXCHANGE.

The COURSE OF EXCHANGE may be defined to be the current prices of exchange, or the prices given from time to time in one country for Bills of Exchange payable in the currency of another. It is the *variable* price (estimated in the currency of one country) which is given for a *fixed* sum in the currency of another country.

EXPLANATION OF THE QUOTATIONS OF THE COURSE OF EXCHANGE.

France	Francs and Centimes	per £1.
Belgium	,, ,,	,, ,,
Holland	Florins and Stivers	,, ,,
Italy	Lire and Centimes	,, ,,
Switzerland	Francs and Centimes	,, ,,
Germany	Reichsmarks and Pfennige	,, ,,
Hamburg	,, ,,	,, ,,
Bremen	,, ,,	,, ,,
Lübeck	,, ,,	,, ,,
Frankfort-on-Maine	Florins	,, £10.
Russia	Pence Sterling	,, Silver rouble.
Spain	,, ,,	,, Peso.
Calcutta	,, ,,	,, Rupee.
Portugal	,, ,,	,, Milreis.
America	,, ,,	,, Dollar.

* The *balance of trade* is identical with the *balance of payments* when *two* countries buy from each other on equal periods of credit; but not *so where the periods of* credit are different.

Although Holland is quoted in florins and stivers (20 stivers = 1 florin), bills are invariably drawn in florins and cents; each stiver is equal to 5 cents.

THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

The money of account consists of pounds, shillings, and pence sterling.* It is as follows:—

British value.	*Systematic name.*	*French value.*
4 Farthings	= 1 Penny	= 12 Centimes.
12 Pence	= 1 Shilling	= 1 Franc 26 ,,
20 Shillings	= 1 Pound sterling	= 25 ,, 20† ,,

Gold is the standard of value, and the basis of the money of account and of the currency; it is coined at the rate of £46 14s. 6d. (or £46·725) to the pound weight Troy.

The currency consists of gold, silver, and bronze coins; and of Bank Notes, exchangeable on demand at their full nominal value, for gold and silver.

The Saxons and Danes used brass and silver money. The Normans discontinued brass, and used silver only. Gold money was introduced in the reign of Henry III. Copper money was introduced in 1672, and was replaced by bronze money in 1860.

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* The term *sterling* distinguishes the currency of Great Britain and Ireland from that of the British Colonies, and from some Continental moneys bearing the same names. *Sterling* is an abbreviation of *Easterlings*, the name by which *Eastphalian* traders, the ancestors of the merchant princes of Hamburgh, were known in England. Their money was of the finest quality, and hence Easterling shortened into sterling became a general term for pure money.

† The letters *£ s. d.* (the initials of the Latin words *libræ, solidi*, and *denarii*) are used in accounts to denote respectively *pounds, shillings*, and *pence*, and are either written over or at the side of those denominations. Farthings are generally written as fractions of a penny, and are seldom considered as integers, but when they are, the letter q. (the initial of the Latin *quadrantes*) is written over them. As fractions they are written as follows:—¼=1 farthing; ½=2 farthings or 1 halfpenny; ¾=3 farthings.

GOLD COINS.

	French value. F. C.	*German value.* M. Pfg.	*United States value.* Dollars. Cent.
1 Sovereign (or Pound)	= 25 20	= 20 40	= 4 84
½ ,, (or 10 Shillings	= 12 60	= 10 20	= 2 42

Gold Pieces of 2 Pounds and 5 Pounds are also legal, but they are not in circulation.

The Sovereign is the principal legal tender and the Standard of value. It is 123·27447 grains (7·98805 grammes) of English Standard gold composed of 11 parts of fine gold and 1 part alloy, chiefly copper.* Its full standard weight ought to be 113·00160 grains or 7·32238 grammes of pure gold.

The remedy is the allowance for imperfection of workmanship and is $\frac{3}{10}$ of a grain (0·01296 gramme). The sovereign when issued from the Mint should therefore not weigh less than 123·074 grains or more than 123·474 grains.

By the Coinage Act of 1870, 35 Vict. cap. 16, gold coins are a legal lender for a payment of any amount.

SILVER COINS.

	French value. F. C.	*German value.* M. Pfg.	*United States value.* Dol. Cents.
Crown (or 5 Shillings)	= 6 25	= 5 0	= 1 22
½ ,, (2s. 6d.)	= 3 12	= 2 50	= 0 61
Florin (2s. 0d.)	= 2 50	= 2 0	= 0 49
Shilling	= 1 25	= 1 0	= 0 25
Sixpence	= 0 63	= 0 50	= 0 12
Groat (4 pence)	= 0 42	= 0 33	= 0 8
Three pence	= 0 31	= 0 25	= 0 6
Two pence	= 0 21	= 0 16	= 0 4
Penny	= 0 10	= 0 8	= 0 2

Silver coins are merely tokens or representative coins, and form a subsidiary and subordinate currency. They are coined at the rate of 66s. to the pound weight Troy, and are a legal tender for payment of an amount not exceeding forty shillings in a single payment. The shilling weighs 87·272727 grains (5·65518 grammes) of standard silver, and the weights of all the other silver coins are exact multiplies or sub-divisions of this.

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* Formerly the alloy in the gold coins consisted partly of silver, and the yellowness of guineas and of many Australian sovereigns was due to this silver alloy, but all such silvery gold coins are rapidly disappearing from circulation.

The mint remedy in the weight of a shilling is little more than the $\frac{1}{2}$ of a grain, and so on for the other silver coins. Silver coin is issued by the mint at 5s. 6d. per ounce, and the profit on the coinage of silver varies with price paid by the mint for standard silver; thus at a market price of 54 per ounce the profit to the State is at the rate of $22\frac{2}{9}$ per cent. In other words when the price of silver in the market is 54d per ounce the nominal value of English silver coin is 22 per cent. above its real value; that is to say, for example, the market value of the silver in 20 shillings would, at this price, be 22 per cent. less than the value of the gold in a sovereign; or, to take another example, the value of the gold in 5 sovereigns would be equal to the real value of the silver in 122 shillings, but in nominal value 120 shillings are equal to 5 sovereigns.

Twopenny and penny pieces are not in general use. Silver fourpences, twopences, and pennies are struck every year and distributed, on the Thursday before Easter, as alms by the Sovereign, under the name of Maundy Moneys. There is no legal limit as to the quantity of silver currency in Great Britain.

BRONZE COINS.

	French value. F. C.		*German value.* M. Pfg.		*United States value.* Dol. Cents.	
Penny =	0	10 =	0	8 =	0	2
Halfpenny =	0	5 =	0	4 =	0	1
Farthing =	0	$2\frac{1}{2}$ =	0	2 =	0	$\frac{1}{2}$

Bronze coins are a legal tender for payment of an amount not exceeding one shilling.

The present bronze coinage was introduced in 1860 (Act 22, Vic. c. 30), and the copper coinage was called in. The withdrawal of copper continued until the 31st December, 1869, after which date that coinage was no longer current. The bronze coins are composed of 95 parts by weight of copper to 4 of tin and one of zinc. A pound of the bronze is coined into 48 penny pieces, or 80 half-penny pieces, or 160 farthing pieces.

The weights of the penny, the halfpenny, and the farthing, when issued, ought to be respectively 145·833; 87·500; and 43·750 grains. The remedy in weight is $\frac{1}{5}$th per cent.

The penny measures in diameter $1\frac{1}{5}$ inches, the halfpenny 1 inch, and the farthing $\frac{4}{5}$ of an inch. Tin was used for coinage in 1680, when farthings were struck in that metal with a stud of copper let into the centre; and, again, in 1690-91, when both half-pence and farthings were issued.

BANK NOTES.

Bank of England Notes are a legal tender for any sum over £5, and are current at full value throughout the whole of the United Kingdom of Great Britain and Ireland; they are for £5, £10, £20, £50, £100, £200, £300, £500, £1,000.

BRITISH MONEY COMPARED WITH IMPERIAL GERMAN, UNITED STATES, FRENCH, ITALIAN, BELGIAN, SWISS, NETHERLANDS, AND DANISH MONEY.

British money.	German value.	United States value.	French, Belgian, Italian, and Swiss value.	Netherlands value.	Danish value.
£ s. d.*	Mks. Pfg.*	Dol. C.	F. C.	Fl. Ct.	Kr. Or.*
0 0 1	0 8	0 2	0 10	0 5	0 7
0 0 2	0 17	0 4	0 20	0 10	0 15
0 0 3	0 25	0 6	0 30	0 15	0 22
0 0 4	0 34	0 8	0 40	0 20	0 30
0 0 6	0 51	0 12	0 60	0 25	0 45
0 1 0	1 2	0 24	1 20	0 55	0 90
0 2 0	2 4	0 48	2 50	1 15	1 81
0 2 6	2 55	0 60	3 10	1 45	2 26
0 5 0	5 10	1 21	6 30	2 95	4 53
0 10 0	10 20	2 42	12 60	5 95	9 7
1 0 0	20 40	4 84	25 20	11 95	18 15
5 0 0	102 00	24 20	126 0	59 75	90 75
10 0 0	204 0	48 40	252 0	119 50	181 50
20 0 0	408 0	96 80	504 0	239 00	363 0
50 0 0	1020 0	242 00	1260 0	597 50	907 50
100 0 0	2040 0	484 00	2520 0	1195 0	1815 0
500 0 0	10200 0	2420 00	12600 0	5975 0	9075 0
1000 0 0	20400 0	4840 00	25200 0	11950 0	18150

* £ s. d. = Pounds, Shillings, and Pence sterling.
Mks. Pfg. = Reichsmarks and Pfennige.
Dol. C. = Dollars and Cents.
F. C. = Francs and Centimes.
Fl. Ct. = Florins (or Guilders) and Cents.
Kr. Ör. = Krone and Öre.

AVERAGE RATES OF EXCHANGE FROM 1ST JANUARY, 1841, TO 31ST DECEMBER, 1876.

	Three Months date.						*Six Months date.*
	Paris.		Amsterdam.		Hamburg.		Calcutta.
Years.	F.	C.	Florins	Stivers.	Marc Banco	Pfnge.	Pence per Rupee.
1841-45	25	80	12	5	13	12	23
1846-50	25	72	12	4	13	12½	23⅛
1851-55	25	38	11	18	13	8	25
1856-60	25	50	11	18	13	7	25⅛
1861-65	25	56	11	17	13	8½	25
1866-70	25	37	12	1	13	10	23⅝
1871-75	25	71	12	2	*13	10½	22⅜

GOLD AND SILVER BULLION IN GREAT BRITAIN AND IRELAND.

I.—GOLD.

The Bank of England buys gold at the rate of £3 17s. 9d. per ounce standard, as provided in the Act 7 and 8 Vict., cap. 32, sec. 4. Anyone may "demand from the Bank of England Bank of England Notes in exchange for gold bullion at the rate of £3 17s. 9d. per ounce of standard gold, such gold bullion to be assayed at the expense of the parties tendering it."

Gold and silver bullion are weighed in ounces and decimal parts, in accordance with Act 16 and 17 Vict., cap. 29; previously the weights were expressed in lbs., ozs., dwts., and grs. For the convenience of the Mint the maximum weight of a gold bar bought by the Bank is fixed at 200 ozs.

The Bank buys gold on assay reports expressed in thousandths and thirds of thousandths † better or worse than standard.

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* This quotation is for the years 1871 to February, 1873. The Hamburg Money of Exchange was altered in February, 1873, by the abolition of the old *Marc Banco* and the substitution of Imperial German Reichsmarks; and the average quotations for the years 1873-1876 were for 1873, 20M. 53Pf.; for 1874, 20M. 62Pf.; for 1875, 20M. 70Pf.; for 1876, 20M. 72Pf.

† "Gold standarding tables to one-three-thousandth part.' "Bank of England, 1870."

The degree of fineness of gold as ascertained by assay is expressed decimally, pure gold being taken as unity or 1000.

English standard gold, which contains $\frac{11}{12}$ths of fine gold, and $\frac{1}{12}$th of alloy, is said to be ·9166 fine. In other words, 1000 parts of standard gold contains 916⅔ parts of fine gold, and 83⅓ parts of alloy.

The degree of fineness, or the *report* of gold, may be expressed either by the number of parts of fine gold in the whole mass, or by the number of parts better or worse than standard. For example, fine gold may be taken as (unity) 1000 or as 83⅓ thousandths *better* than standard, and gold having a fineness of 833⅓ thousandths is 83⅓ thousandths *worse* than standard. The rule for standarding gold—that is, for reducing the gross or actual weight to what the weight would be if it were really standard—is, to multiply the gross weight by the *report*, and divide the product by the number of parts in standard. Thus:

1. If the report express the number of parts of fine gold in the whole mass—say, for example, 992⅓—then multiply the gross weight by 992⅓, and divide the product by 916⅔.

2. If the report express the number of parts of fine gold better or worse than standard—say 75⅔—multiply the gross weight by 75⅔, divide as before, and add the product to, or substract it from, the gross weight, as the case may be.

Gold bars are sold at £3 17s. 10½d. per ounce standard. Gold coins of various countries are bought by the Bank of England, and the buying price is determined by the rate at which the Bank can convert the coins into bars, at 77s. 9d. per oz. standard. The selling price is fixed with reference to the rate which will make the particular coin preferable to bar gold or sovereigns when gold is wanted for export.

The Mint undertakes to return to the Bank the full weight standard in coined gold without any deduction at 77s. 10½d. per oz. This is called the Mint price of gold; it is the quotient obtained by dividing the number of grains in an ounce Troy, viz. 480, by the number of grains in a sovereign, viz. 123·27447; thus 480÷123,27447 = 3·89375026 = £3 17s. 10½d.

English light gold coin is cut and withdrawn from circulation under authority of the Act 14, Geo. III., cap. 70, sec. 10, and a Royal proclamation of the 3rd June, 1842. The melting and export of coin is legalised by the Act 59, Geo. III., cap. 49, sec. 10. The defacing of coin is prohibited by the Act 16 and 17 Vict., cap. 102.

II.—Silver.

Silver bullion is purchased by the Bank of England at a price fixed by the rate at which silver could be resold, and the proceeds realised in bar gold at 77s. 9d. per ounce.

The standard of British silver is $\frac{222}{240}$ths; that is 11 ounces, 2 dwts., or 222 dwts. pure in 240 dwts., or an alloy of 18 dwts. in the lb. Troy.

This proportion, known as the "old right standard of England," corresponds to 925 parts pure in 1000.

The purity of silver bullion or of foreign silver coin, with reference to this standard, is expressed in dwts. by the terms *betterness* or *worseness*, meaning so many dwts. more or less than 222, as the case may be, in the lb. Troy (240 dwts.) Thus bullion or coin found on assay to contain 238 dwts. of pure silver in the lb. is reported *better* 16 dwts.; and bullion or coin containing 206 dwts. pure in the lb. is reported *worse* 16.

To determine how much silver of standard fineness is equivalent to a given weight of bullion or foreign coin of a given *betterness* or *worseness*:—

I. When the bullion is *better* than standard add the *betterness* to 222, multiply the weight of bullion by the sum, and divide the product by 222.

Example.—How much standard silver is equivalent to 1000 oz. of bullion which is *better* $17\frac{1}{2}$?—(1000 × 222 + $17\frac{1}{2}$) ÷ 222 = 239500 ÷ 222 = 1078·8 or $1078\frac{4}{5}$ oz. standard.

II. When the bullion is *worse* than standard, deduct the *worseness* from 222, multiply the weight of bullion by the remainder, and divide the product by 222.

Example.—How much standard silver is equivalent to 1000 ozs. of bullion represented, worse 16? (1000 × 222—16) ÷ 222 = 1000 × 206 ÷ 222 = 206000 ÷ 222 = $927\frac{9}{10}$ oz. standard.

AVERAGE PRICE OF BAR SILVER PER OUNCE STANDARD FROM JANUARY, 1841, TO DECEMBER, 1876.

	Average Price. *Pence per Ounce.*		Average Price. *Pence per Ounce.*
1841-46	$59\frac{1}{2}$	1862	$61\frac{7}{16}$
1847	$59\frac{11}{16}$	1863	$61\frac{3}{8}$
1848	$59\frac{1}{2}$	1864	$61\frac{3}{8}$
1849	$59\frac{3}{4}$	1865	$61\frac{1}{16}$
1850	$60\frac{1}{16}$	1866	$61\frac{1}{4}$
1851	61	1867	60
1852	$60\frac{1}{4}$	1868	60
1853	$61\frac{1}{8}$	1869	$60\frac{1}{8}$
1854	$61\frac{1}{8}$	1870	$60\frac{1}{2}$
1855	$61\frac{5}{16}$	1871	$60\frac{1}{2}$
1856	$61\frac{5}{16}$	1872	$60\frac{5}{16}$
1857	$61\frac{3}{4}$	1873	$59\frac{1}{4}$
1858	$61\frac{5}{16}$	1874	$58\frac{5}{16}$
1859	$62\frac{1}{16}$	1875	$56\frac{7}{8}$
1860	$61\frac{11}{16}$	1876	50
1861	$60\frac{13}{16}$		

The rise in the years 1853-60 was due to the abundance of gold from the Australian and Californian gold discoveries; and the price was maintained for some years afterwards by the increased exportation of silver to the East, owing to the high prices of cotton and the large imports of it from India to Europe during the American Civil War.

The fall in price in the years 1873-76 was due partly to the demonetisation of silver in Germany and other European countries, and to the great productiveness of the silver mines of America.

The weight and fineness of the coins specified in the following table are in accordance with the Act fifty-six, George the Third, chapter sixty-eight, that the gold coin of the United Kingdom of Great Britain and Ireland should hold such weight and fineness as were prescribed in the then existing Mint indenture (that is to say), that there should be $934\frac{1}{2}$ sovereigns contained in twenty pounds weight Troy of standard gold, of the fineness at the trial of the same twenty-two carats fine gold and two carats of alloy in the pound weight Troy; and further, as regards silver coin, that there should be sixty-six shillings in every pound Troy of standard silver of the fineness of eleven ounces two pennyweights of fine silver and eighteen pennyweights of alloy in every pound weight Troy.

Denomination of Coin.	Standard Weight.		Least Current Weight.		Standard Fineness.	Remedy Allowance.		
						Weight per piece.		Millesimal Fineness.
	Imperial Weight. Grains.	Metric Weight. Grams.	Imperial Weight. Grains.	Metric Weight. Grams.		Imperial Grains.	Metric Grams.	
GOLD:								
Five Pound	616·37239	39·94028	612·50000	39·68935	Eleven-twelfths fine gold, one-twelfth alloy; or millesimal fineness 916·66.	1·00000	0·06479	0·002
Two Pound	246·54895	15·97611	245·00000	15·87574		0·40000	0·02592	
Sovereign	123·27447	7·98805	122·50000	7·93787		0·20000	0·01296	
Half Sovereign	61·63723	3·99402	61·12500	3·96083		0·10000	0·00648	
SILVER:								
Crown	436·36363	28·27590	—	—	Thirty-seven-fortieths fine silver, three-fortieths alloy; or millesimal fineness 925·	1·81818	0·11781	0·004
Half Crown	218·18181	14·13795	—	—		0·90909	0·05890	
Florin	174·54545	11·31036	—	—		0·72727	0·04712	
Shilling	87·27272	5·65518	—	—		0·36363	0·02356	
Sixpence	43·63636	2·82759	—	—		0·18181	0·01178	
Groat or Fourpence	29·09090	1·88506	—	—		0·12121	0·00785	
Threepence	21·81818	1·41379	—	—		0·09090	0·00589	
Twopence	14·54545	0·94253	—	—		0·06060	0·00392	
Penny	7·27272	0·47126	—	—		0·03030	0·00196	
BRONZE:								
Penny	145·83333	9·44984	—	—	Mixed metal, viz. 95 copper, 4 tin, and 1 zinc.	2·91666	0·18899	None.
Halfpenny	87·50000	5·66990	—	—		1·75000	0·11339	
Farthing	43·75000	2·83495	—	—		0·87500	0·05669	

The following table, from Dr. Kelly's "Universal Cambist," shows the alterations as to weight and fineness in English gold and silver coins, from A.D. 1066, and the comparative value of gold and silver at the different dates.

Date.	Reign.	Silver.				Gold.				Comparative Value of Fine Gold and Silver.
		Fineness of Silver Coins		Pound Troy of such Silver coin'd into.		Fineness of Gold Coins.		Pound Troy of such Gold coined into.		
		oz.	ds.	£ s.	d.	car.	grs.	£ s.	d.	
1066	William I.	11	2	1 1	4					
1280	Edward I.	11	2	1 1	4					
1344	Edward III.	11	2	1 1	6	23	3½	14 0	10	1 to 12·584
1349	Edward III.	11	2	1 3	0	23	3½	14 18	8	1 ,, 11·571
1356	Edward III.	11	2	1 6	8	23	3½	16 0	0	1 ,, 11·158
1421	Henry V.	11	2	1 12	0	23	3½	17 16	0	1 ,, 10·331
1464	Edward IV.	11	2	2 0	0	23	3½	22 4	6	1 ,, 10·331
1465	Edward IV.	11	2	2 0	0	23	3½	24 0	0	1 ,, 11·158
1470	Henry VI.	11	2	2 0	0	23	3½	24 0	0	1 ,, 11·158
1482	Edward IV.	11	2	2 0	0			24 0	0	1 ,, 11·158
1509	Henry VIII.	11	2	2 0	0			24 0	0	1 ,, 11·158
1527	Henry VIII.	11	2	2 2	8	22	0	24 0	0	1 ,, 11·468
1543	Henry VIII.	10	0	2 8	0	23	0	28 16	0	1 ,, 10·434
1545	Henry VIII,	6	0	2 8	0	22	0	30 0	0	1 ,, 6·818
1546	Henry VIII.	4	0	2 8	0	20	0	30 0	0	1 ,, 5·000
1547	Edward VI.	4	0	2 8	0	20	0	30 0	0	1 ,, 5·000
1549	Edward VI.	6	0	3 12	0	22	0	34 0	0	1 ,, 5·151
1551	Edward VI.	5	0	3 12	0	23	3½	34 0	0	1 ,, 11·000
1552	Edward VI.	11	1	3 0	0	22	0	36 0	0	1 ,, 11·050
1553	Mary	11	0	3 0	0	23	3½	36 0	0	1 ,, 11·057
1560	Elizabeth	11	2	3 0	0	22	0	36 0	0	1 ,, 10·100
1600	Elizabeth	11	2	3 2	0	23	3½	36 10	0	1 ,, 10·904
1604	James I.	11	2	3 2	0	22	0	33 10	0	1 ,, 12·109
1626	Charles I.	11	2	3 2	0	22	0	41 0	0	1 ,, 13·346
1666	Charles II.	11	2	3 2	0	22	0	44 10	0	1 ,, 14·485
1717	George I.	11	2	3 2	0	22	0	46 14	6	1 ,, 15·209
1816	George III.	11	2	3 6	0	22	0	46 14	6	1 ,, 14·287
1821	George IV.	11	2	3 6	0	22	0	46 14	6	1 ,, 14·287
1876	Victoria	11	2	3 6	0	22	0	46 14	6	1 ,, 14·287

The following Coins, no longer in circulation, are sometimes mentioned in books and old documents :—

Name of Coin.	Value.	Date.	Reign.	Remarks.
Gold Coins :	£ s. d.			
Byzant	0 10 0	9—14 centuries		Coined by the Emperors at Constantinople ; these circulated freely in England, from the 9th to the 14th century, before the introduction of British gold coins.
Florence	0 10 0	13 Century		So-called because they were originally struck at Florence ; they contained ¼ of an ounce of gold, and were of the same value as the Byzants.
Pennie	0 1 8	1257	Henry III.	The gold coins struck by Henry III. were 24 carat fine or pure gold. The Pennie weighed two silver pence, and passed for 20 pence. Edward III. changed the standard of fineness to 23 carats, 3½ grains fine. Henry VIII. reduced the standard to 20 carats fine.
Mark	0 13 4			
Noble	0 6 8	1344	Edward III.	
Half-Noble ...	0 3 4	,,	,,	
Quarter-Noble	0 1 8	,,	,,	
Ryal or Rose Noble	0 10 0	1465	Edward IV.	The Ryal was a gold noble struck with a design representing the King standing in a ship and armed with a sword and shield. The design was altered to "George and the Dragon" in 1533, when the coin was called the "George Noble."
Angel	0 6 8	,,	,,	The Angel or Angelet, gold coins first struck in Paris during the English occupation, were so-called from the design, an angel supporting the arms of France and England
,, ...	0 7 4	1526		
,, ...	0 8 0	1544		
,, ...	0 10 0	1554		
Angelet (or Angelot)	0 5 0		Mary	
Double-ryal ..	1 0 0	1489	Henry VII.	
Crown		1527	Henry VIII.	These were 22 carats fine, and this standard, called "crown gold," was finally adopted as the sole standard, and has remained so ever since.
Laurel	1 0 0	1603	James I.	The Laurel of James I. was adopted by Charles II., and was subsequently called a guinea.
Jacobus.....	1 5 0	,,	,,	The Jacobus was also called a unite or broad piece.
Jacobus (or Carolus)	1 8 0	,,	,,	
Guinea	1 0 0	1663		The Guinea originally issued at 20s. rose in value in 1695 to £1 10s. In 1696 its value was £1 5s In 1667 it was £1 2s. In 1717 its value was fixed at £1 1s. sterling.
,, ...	1 10 0	1695	Anne	
,, ...	1 5 0	1696		
,, ...	1 2 0	1697		

Coins no longer in circulation—*continued.*

Name of Coin.	Value.	Date.	Reign.	Remarks.
GOLD COINS:	£ s. d.			
Guinea	1 1 0	1717	George I.	At different periods certain f gold coins were allowed t current at specified rates the Portuguese moidore w lowed to circulate at 27s., a joanese at 36s.
Half Guinea..				
Third of a Guinea.....	0 7 0	1717	„	At the accession of William pound in tale of silver coi equal to the pound wei standard silver, *i.e.*, the Sa Moneyer's or tower pou 15-16th lb. Troy. The pou tale was divided into 20s each shilling into 12 pe sterlings, each weighing 24 This system of coinage, was after the plan of C magne, and was supposed t originated with the Roman continued without alterati the 28th year of Edward I. that date the penny had be highest denomination of coin; half-pence (or maille farthings having been intro by Henry I.
Quarter of a Guinea	0 5 3	1718		
Three Pound Piece	3 0 0			
SILVER COINS:				
Testoon (or Shilling		1504	Henry VIII.	Henry VIII. caused the pou silver, one-third fine, to be c in 48 testoons in 1547.
„		1547-1553	Edward VI.	Edward VI. caused the pou silver, one-fourth fine, to be c into 72 testoons; Charles II. c it to be coined into 62 shi and at this rate it continue the year 1816, when the ra fixed at 66 shillings, the p rate.
Testor				
Halfpenny ...				
Farthing.....				
Two Mark Piece		1567-1603	James VI. of Scotland.	
Balance Mark.			„	
Half Mark ...			„	
Thistle Mark..			„	
„ Half Mark			„	Also Spanish dollars stamp the purpose were put int lation by the bank of E and received back at th rate.

IRISH CURRENCY PRIOR TO THE YEAR 1826.

Previous to the year 1826 Ireland had a currency of different value from that of Great Britain, although the denominations were the same, namely:—

Old Irish value.		*Systematic name.*		*British value.* £ s. d.
4 Farthings	=	1 Penny	=	0 0 $1\frac{1}{13}$
12 Pence	=	1 Shilling	=	0 0 $11\frac{1}{13}$
20 Shillings	=	1 Pound	=	0 18 $5\frac{7}{13}$
21 Shillings	=	1 Guinea	=	0 19 $4\frac{8}{13}$

By the Act 6th, George IV., chapter 79, which took effect from 5th January, 1826, the currency of Great Britain was constituted the currency of the United Kingdom of Great Britain and Ireland, and debts contracted previous to the Act were paid in British currency at the rate of *twelve-thirteenths* of the amount of Irish currency. British gold and silver coins were constituted the legal currency of Ireland.

To convert Irish money into British Sterling, multiply by 12 and divide by 13.

To convert British Sterling into Irish Currency, multiply by 13 and divide by 12.

COMPARATIVE TABLE OF BRITISH STERLING AND IRISH CURRENCIES.

British £ s. d.	*into*	*Irish.* £ s. d.	*Irish* £ s. d.	*into*	*British.* £ s. d.
0 0 1	=	0 0 1	0 0 $1\frac{3}{4}$	=	0 0 $1\frac{1}{2}$
0 0 2	=	0 0 $2\frac{1}{4}$	0 0 2	=	0 0 $1\frac{3}{4}$
0 0 3	=	0 0 $3\frac{1}{4}$	0 0 $2\frac{1}{4}$	=	0 0 $2\frac{1}{4}$
0 0 4	=	0 0 $4\frac{1}{2}$	0 0 3	=	0 0 $2\frac{3}{4}$
0 0 $5\frac{1}{2}$	=	0 0 6	0 0 4	=	0 0 $3\frac{3}{4}$
0 0 6	=	0 0 $6\frac{1}{4}$	0 0 5	=	0 0 $4\frac{1}{2}$
0 0 9	=	0 0 $9\frac{3}{4}$	0 0 $5\frac{3}{4}$	=	0 0 $5\frac{1}{4}$
0 0 $11\frac{1}{13}$	=	0 1 0	0 0 $8\frac{3}{4}$	=	0 0 8
0 1 0	=	0 1 1	0 0 9	=	0 0 $8\frac{1}{4}$
0 2 0	=	0 2 2	0 0 10	=	0 0 $9\frac{1}{4}$
0 2 $3\frac{1}{2}$	=	0 2 6	0 0 11	=	0 0 $10\frac{1}{4}$
0 2 6	=	0 2 $8\frac{1}{4}$	0 1 0	=	0 0 11
0 4 $7\frac{1}{4}$	=	0 5 0	0 2 6	=	0 2 $3\frac{1}{2}$
0 5 0	=	0 5 5	0 5 0	=	0 4 $7\frac{1}{4}$
0 6 $10\frac{1}{2}$	=	0 7 6	0 10 0	=	0 9 2
0 7 6	=	0 8 $1\frac{1}{2}$	0 10 6	=	0 9 $7\frac{1}{4}$
0 9 $2\frac{1}{2}$	=	0 10 0	1 0 0	=	0 18 $5\frac{1}{2}$

BRITISH STERLING AND IRISH CURRENCIES—*continued.*

British			*into*	*Irish.*		
0	9	8	=	0	10	6
0	10	0	=	0	10	10
0	10	6	=	0	11	4½
0	18	5½	=	1	0	0
0	19	4½	=	1	1	0
1	0	0	=	1	1	8
1	1	0	=	1	2	9
2	0	0	=	2	3	4
4	12	3½	=	5	0	0
4	16	11 1/13	=	5	5	0
5	0	0	=	5	8	4
5	5	0	=	5	13	9
9	13	9¾	=	10	10	0
10	10	0	=	11	7	6
100	0	0	=	108	6	8
105	0	0	=	113	15	0
200	0	0	=	216	13	4
300	0	0	=	325	0	0
400	0	0	=	433	6	8
700	0	0	=	758	6	8
900	0	0	=	975	0	0
1000	0	0	=	1083	6	8

Irish			*into*	*British.*		
1	1	0	=	0	19	4½
2	0	0	=	1	16	11
3	0	0	=	2	15	4½
4	0	0	=	3	13	10½
5	0	0	=	4	12	3¾
9	0	0	=	8	6	1¾
10	0	0	=	9	4	7½
10	10	0	=	9	13	9¾
20	0	0	=	18	9	2¾
50	0	0	=	46	3	1
60	0	0	=	55	7	8½
70	0	0	=	64	12	3¾
100	0	0	=	92	6	1¾
200	0	0	=	184	12	3½
300	0	0	=	276	18	5¼
400	0	0	=	369	4	7½
700	0	0	=	646	3	1
900	0	0	=	830	15	4½
1000	0	0	=	923	1	6½

THE CHANNEL ISLANDS,

VIZ :—

GUERNSEY, JERSEY, ALDERNEY, AND SARK.

The denominations of money used in accounts are *Pounds*, *Shillings*, and *Pence* sterling, the same as the United Kingdom of Great Britain and Ireland—and the current coins are the same. Formerly £1 sterling was equal to £1 1s. 8d. Channel Island currency, but British sterling money is now the only legal currency in the Channel Islands; the special Channel Island Copper currency, of which 13 pence went to the British Shilling, ceased to be current on December 31st, 1876.

ISLE OF MAN.

Prior to 1840 there was a Copper currency in this island, of which 14d. was equivalent to 1s. British, and £1 3s. 4d. to £1 sterling.

On March 17th, 1840, an Act, of Tynwald, was promulgated assimilating the copper currency to that of Great Britain, and fixing the equivalent rates; this Act came in operation in September, 1840, and the old Manx currency was abolished.

FRANCE.

French value.		*Systematic name.*		*English value.*
		1 Centime	=	$\frac{1}{200}$d.
100 Centimes	=	1 Franc	=	9$\frac{1}{2}$d.

The monetary unit is a franc, and consists of five grammes of silver *nine-tenths* fine.

In France (as also in Belgium, Italy, Switzerland, and Greece, the countries of the Latin Monetary Union,) a double monetary standard exists in theory; that is, gold and silver are both legal tenders to unlimited amounts, and are coined on the basis of a fixed legal relative value of 15$\frac{1}{2}$ of silver to 1 of gold; a kilogramme of gold is coined into 3100 francs, and a kilogramme of silver into 200 francs; this relation is based upon a market price for silver of about 60$\frac{1}{4}$d. per ounce. But the silver coins of less value than five francs, are on the footing of token money; they contain 7$\frac{1}{2}$ per cent. less pure silver than the five-franc pieces, and they are a legal tender for only a limited amount. The five-franc pieces contain 900 parts of pure metal in 1000, and the coins of lower denominations contain only 835 parts of pure silver in 1000. The amount of silver five-franc pieces allowed to be minted in each country of the Latin Monetary Union is limited; and, practically, this limitation has the effect of reducing silver to the rank of a money token.

In the Session of 1876, the Finance Minister presented to the Senate a bill to the effect "that the coinage of silver five-franc pieces may be limited or suspended by decrees;" thus enabling the Government to maintain an expectant attitude on the question, still much debated, of a single or double monetary standard.

GOLD COINS.

The gold coins are pieces of 100, 50, 25, 20, 10, and 5 francs.

SILVER COINS.

The silver coins are pieces of 5, 2, and 1 franc, and the $\frac{1}{2}$ franc and the 20 centime piece.

BRONZE COINS.

The bronze coins are pieces of 10, 5, 2, and 1 centimes, which weigh respectively 10, 5, 2, and 1 grammes.

The bronze coins in most general use are the 10 and 5 centime pieces. The 2 centime piece is seldom met with, and the 1 centime piece is still more uncommon.

The bronze coinage of France is composed of 95 parts of pure copper, 4 of tin, and 1 of zinc.

BANK NOTES.

The Bank Notes are for 5, 10, 20, 50, 100, 200, 500, 1000 francs,* and can be exchanged for gold and silver at their full nominal value.

Table of the weight, fineness, and English value of French coins:—

Denomination of Coin.	Full weight in Grammes.	Standard Fineness in thousandth parts.	Diameter in Milli-metres.	English value at 25 Francs 20 Centimes to £1.
				£ s. d.
GOLD:—				
100 Francs	32258·06	900	35	3 19 $4\frac{1}{2}$
50 ,,	16129·03	,,	28	1 19 8
25 ,,	8064·515	,,	,,	0 19 10
20 ,,	6451·61	,,	21	0 15 $10\frac{1}{2}$
10 ,,	3225·80	,,	19	0 7 $11\frac{1}{4}$
5 ,,	1612·90	,,	17	0 3 $11\frac{3}{4}$
SILVER:—				
5 Francs	25	900	37	0 3 $11\frac{3}{4}$
2 ,,	10	835	27	0 1 7
1 ,,	5	,,	23	0 0 $9\frac{1}{2}$
50 Centimes	2·50	,,	18	0 0 $4\frac{3}{4}$
20 ,,	1	,,	16	0 0 2
BRONZE:—				
10 Centimes		950		0 0 1
5 ,,		,,		0 0 $\frac{1}{2}$
2 ,,		,,		0 0 $\frac{1}{5}$
1 ,,		,,		0 0 $\frac{1\cdot0}{2\,0\,0}$

* Since the 1st January, 1875, coins issued by the Papal Mint have not been current in France.

COMPARATIVE TABLE OF FRENCH, GERMAN, UNITED STATES, AND BRITISH COINS.

French Coins.	German value.		America. United States Value.		British Value.		
	Reichsmarks.	*Pfennige.*	*Dollars.*	*Cents.*	£	s.	d.
110 Francs	80	0	19	36	4	0	0
50 ,,	40	0	9	68	2	0	0
20 ,,	16	0	3	87	0	16	0
10 ,,	8	0	1	93	0	8	0
5 ,,	4	0	0	96½	0	4	0
5 ,,	4	0	0	96½	0	4	0
2 ,,	1	60	0	38	0	1	7½
1 ,,	0	80	0	19	0	0	10
50 Centimes	0	40	0	9½	0	0	5
20 ,,	0	16	0	4	0	0	2
10 ,,	0	8	0	2	0	0	1
5 ,,	0	4	0	1	0	0	0½
2 ,,	0	1⅗	0	0⅖	0	0	0⅕
1 ,,	0	⅘	0	0⅕	0	0	0$\frac{1}{10}$

AVERAGE COURSE OF EXCHANGE WITH LONDON AT THREE MONTHS' DATE FOR £1 STERLING.

	Francs.	Centimes.
Years, 1841—1845	25	80
,, 1846—1850	25	72
,, 1851—1855	25	38
,, 1856—1860	25	50
,, 1861—1865	25	56
,, 1866—1870	25	37
,, 1871—1875	25	71

The allowance of variation in weight for the gold coins of 100 and 50 francs is one part in 1000, for the 20 and 10 franc pieces it is 2 in 1000, and for the 5 franc gold piece it is 3 in 1000. The allowance from standard purity for all the gold coins is 2 parts in 1000. In regard to the silver coins the allowance from standard weight is for the 5 franc piece 3 parts in 1000, for the 1 and 2 franc pieces 5 parts in 1000; for the half franc pieces 7 parts in 1000; and for the 20 centime pieces 10 parts in 1000. The allowance from standard purity for the 5 franc pieces is 2 parts in 1000, and for all the other silver pieces it is 3 parts in 1000.

The denominations of money used in accounts prior to 1795 were *livres*, *sous*, and *deniers* (12 deniers = 1 sou, 20 sous = 1 livre), and 80 francs were generally considered equal to 81 livres; but by a decree in 1810 45 livres were declared equal to 47 francs 20 centimes, and the pieces of 24, 6, and 3 livres in like proportion. The old gold coins were the Louis of 24, and the double Louis of 48 livres. The silver coins were the Ecu of 6 livres and the half and quarter Ecu pieces.

FRENCH VALUE OF ENGLISH MONEY, AT 25 FRANCS 20 CENTIMES FOR £1 STERLING.

English.		*French.*	*English.*		*French.*
¼d.	=	2½ centimes	2s.	=	2 francs 52 centimes
½d.	=	5¼ ,,	2s. 6d.	=	3 ,, 15 ,,
1d.	=	10½ ,,	5s.	=	6 ,, 30 ,,
3d.	=	31½ ,,	10s.	=	12 ,, 60 ,,
4d.	=	42 ,,	£1	=	25 ,, 20 ,,
6d.	=	63 ,,	£5	=	126 ,,
1s.	=	1 franc 26 centimes	£10	=	252 ,,

RUSSIA.

The denominations of money used in accounts, and the currency, are as follows:—

Russian value.		*Systematic name.*		*English value.*
		1 Copeck	=	·38d.
100 Copecks	=	1 Silver Ruble	=	3s. 2d.

Paper money is the chief medium of payment; gold and silver coins are at a premium, and except the 20, 15, 10, 5 copeck pieces, are rarely met with. The average rate for the paper ruble in recent years has been 2s. 8d. sterling.

GOLD COINS.*

The gold coins are the *imperial* of 10 rubles, the *half-imperial*, and the *three-ruble piece*.

SILVER COINS.

The silver coins are the *ruble*, half-ruble, and the 25, 20, 15, 10, and 5 copeck pieces. (The 5-copeck piece is no longer minted.)

* In the year 1828 there were coined in platina a few pieces of 12, 6, and 3 rubles, but as the metal proved too costly in manufacture, owing to its extreme hardness and its scarcity, its use for coining purposes was wholly discontinued in 1845.

COPPER COINS.

The copper coins are pieces of 5, 3, 2, 1, ½, and ¼ copeck.

BANK NOTES.

The bank notes are for 1, 3, 5, 10, 20, 25, 50, 100, 1,000, and 2,000 rubles.

The provinces of the Caucasus and Georgia have a special silver coinage, namely, the double-abbas = 40 copecks, the abbas = 20 copecks, the half-abbas = 10 copecks, and the shaur = 5 copecks.

TABLE OF THE WEIGHT, FINENESS, AND ENGLISH VALUE OF RUSSIAN COINS.

Denomination of Coins.	Standard of Fineness.	Full weight of Coin.	Weight of Pure Metal.	Weight of Alloy.	English value		
		Dolis.	Dolis	Dolis	£	s.	d.
GOLD COINS.							
Imperial (10 rubles)	$\frac{9}{10}$	$294\frac{6}{11}$	270	$24\frac{6}{11}$	1	11	8
Half-imperial (5 rubles) ..	,,	$147\frac{3}{11}$	135	$12\frac{3}{11}$	0	15	10
Three-ruble piece	,,	$88\frac{4}{11}$	81	$7\frac{4}{11}$	0	9	6
SILVER COINS.							
Ruble	$\frac{83\frac{1}{3}}{96}$	$466\frac{11}{60}$	405	$63\frac{11}{60}$	0	3	2
Half-ruble (Poltinnick) ..	,,	233	$202\frac{1}{2}$	$30\frac{1}{2}$	0	1	7
Quarter-ruble (Tchetwertak)	,,	$116\frac{1}{2}$	$101\frac{1}{4}$	$15\frac{1}{4}$	0	0	$9\frac{1}{2}$
Dwougrivnick (20 copecks)..	Inferior standard	$93\frac{1}{5}$			0	0	$7\frac{3}{5}$
Piatinnick (15 ,,)..		$69\frac{9}{10}$			0	0	$5\frac{7}{10}$
Griwnick (10 ,,)..		$46\frac{3}{5}$			0	0	$3\frac{4}{5}$
Pialachak (5 ,,)..		$23\frac{7}{10}$			0	0	$1\frac{9}{10}$
COPPER COINS.							
Five copecks		576			0	0	$1\frac{9}{10}$
Three copecks		$345\frac{3}{5}$			0	0	1.14
Two copecks		$230\frac{2}{5}$			0	0	.76
One copeck		$115\frac{1}{5}$			0	0	.38
Half-copeck (Deneshka) ..		$57\frac{3}{5}$			0	0	.19
Quarter-copeck (Polushka)..		$28\frac{4}{5}$			0	0	.095

The standard of fineness of the gold coinage is the same as that of English gold coins; the standard of the silver coins, viz., 83⅓ in 96 parts, is inferior to that of the French 5-franc piece, which in Russian weight is $86\frac{4}{10}$ dolis fine.

Besides the above-mentioned coins there are some old coins, struck at different periods, which have not been withdrawn from circulation, viz., in silver the 1½ *ruble piece*, containing 607½ dolis of fine silver; and the 30-*copeck piece*, containing 121½ dolis of pure silver; in copper, the grivnick, formerly equal to 10 copecks, now equal to 3 copecks; the piatak, formerly equal to 5 copecks, now equal to 1½ copecks; and the grosh, formerly equal to 2 copecks, now equal to ½ copeck.

RUSSIAN VALUE OF ENGLISH MONEY at 2s. 6d. PER PAPER RUBLE.

English.		*Russian.*	*English.*		*Russian.*
¼d.	=	⅔ copecks.	2s. 6d.	=	1 ruble.
1d.	=	3⅓ ,,	5s.	=	2 ,,
3d.	=	10 ,,	10s.	=	4 ,,
4d.	=	13⅓ ,,	£1	=	8 ,,
6d.	=	20 ,,	£5	=	40 ,,
1s.	=	40 ,,	£10	=	80 ,,
2s.	=	80 ,,			

RUSSIA.

FINLAND.

In the Grand Duchy of Finland, Russia has sanctioned the adoption, under the names of marks and pennias, of a system the same as that of France, with a metallic currency as follows:—

Finish value.	*Systematic name.*		*English value.* £	s.	d.
	1 Pennia		0	0	$\frac{18}{360}$
100 Pennias*	1 Mark	=	0	0	9½

Silver is the chief standard of value, and there are no gold coins.

The silver coins are 2 marks, 1 mark, 50 pennias, and 25 pennias.

The copper coins are pieces of 10 pennias, 5 pennias, and 1 pennia.

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* The Finish mark, or quarter-rouble, has the precise silver weight and value of the franc, lira, and peseta.

The Bank Notes are for 100, 40, 20, 12, and 3 marks issued by the Finland State Bank; and for 100, 25, and 15 marks issued by the one private bank, "Forenings Banken i Finland."

Two different rates of exchange are quoted, one for buyers and another for sellers; thus 100 rubles (St. Petersburg) = 307 marks for buyers, or 302 marks for sellers; £1 sterling (London) = 25·35 marks for buyers, or 25·15 marks for sellers.

TABLE OF THE FINENESS, WEIGHT, AND ENGLISH VALUE OF FINISH COINS.

Denomination of Coin	Standard of Fineness in thousandth parts.		Weights in Grammes.	English value.		
	Pure Silver.	Alloy Copper.		£	s.	d.
SILVER COINS:—						
2 Marks	.868	.132	10.3658	0	1	7
1 Mark	.868	.132	5·1829	0	0	$9\frac{1}{2}$
50 Pennias	.750	.250	2·5495	0	0	$4\frac{3}{4}$
25 Pennias	.750	.250	1·2747	0	0	$2\frac{3}{8}$
COPPER COINS:—						
10 Pennias			12·7979	0	0	1
5 Pennias			6·3987	0	0	$0\frac{1}{2}$
1 Pennias			1·2797	0	0	$0\frac{1}{10}$

AUSTRIA—HUNGARY.

Austrian value.	*Systematic name.*	*English value.*
1	Kreutzer =	$\frac{1}{10}$d.
100 New Kreutzers = 1	Gulden or Florin =	1s. $11\frac{1}{2}$d.

Silver is still the principal standard of value and a legal tender without limitation; but paper money (see Bank Notes) is practically the chief medium of payment.* The value of the paper money fluctuates from day to day, but may be reckoned at the rate of 1s. 8d. sterling per gulden, or £1 sterling for 12 guldens. The currency is based upon the 45 gulden standard, or that in which a metric Pfund (500 grammes) of fine silver is coined into 45 New Guldens.

* Some efforts were made in the years 1874-5-6 to introduce the gold standard, and at a Congress of Austrian Economists, in April, 1875, ardent wishes were expressed that the Austrian Government should, as soon as possible, withdraw its State Notes, return to specie payments, and adopt the gold standard.

Prior to 1858 Austrian money was based on the *Convention* or *Gulden standard*, or that in which a Cologne mark weight Hamburg standard (3608 grains Troy) of fine silver was coined into 20 guldens, in accordance with a Convention between Austria and Bavaria, concluded in 1753; when the 45 florin standard was introduced, 105 new florins were declared equivalent to 100 old ones.

On the 31st July, 1867, Austria concluded a preliminary treaty with France, whereby the florin of the value of 2½ French francs was fixed as the fundamental unit of account and exchange. In that treaty it was provided that France should coin a piece of 25 francs equal to 10 gulden.

GOLD COINS.

The gold coins are pieces of 8 and 4 gulden, which are of the same weight and fineness as the French gold pieces of 20 and 10 francs, and the coins are inscribed with both the Austrian and French value. On the left side of the Imperial Eagle, on the reverse of the coin, is shown the Austrian value —viz., 8 gulden; and on the right side the French value—viz., 20 francs, and the same with the 4 gulden piece.

By an Imperial degree of 12th July, 1873, French, Belgian, Italian, and Swiss gold pieces, are current in the Austro-Hungarian empire, at the rate of 8 gold guldens to 20 francs of gold coin of the other nations.

SILVER COINS.

The silver coins are the 2 and 1 *Gulden Pieces*, and the 25, 20, and 10 *Kreutzer Pieces*.

BRONZE COINS.

The bronze coins are the 1 and 4 Kreutzer Pieces.

BANK NOTES.

The Bank Notes are for 10 Kreutzers. and 1, 5, 10, 100, and 1000 Guldens; they fluctuate in value as compared with gold and silver money, and are generally at a discount.

Bank Notes are a legal tender without limit in all official and business transactions, and may be legally offered in payment of all interest or debts to private individuals, or taxes to the Government (except Customs' duties), and cannot be refused by the parties unless payment in gold or silver has been specially stipulated.

Table of the weight, fineness, and English value of Austro-Hungarian coins:—

Denomination of Coins.	Standard fineness in hundredth parts.	Full weight in grammes.	Weight of pure metal in grms.	Weight of alloy in grms.	English value.
					£ s. d.
GOLD COINS:—					
8 Gulden piece	$\frac{900}{1000}$ths	6·45161	5·80644	·64516	0 15 10
4 Gulden	,,	2·22580	2·90322	·32258	0 7 11
SILVER COINS:—					
2 Gulden piece	,,	24·691	22·222	2·469	0 3 11¼
1 Gulden	,,	12·346	11·111	1·237	0 1 11½
½ Gulden	$\frac{833}{1000}$	5·342	2·778	2·564	0 0 5¾
20 Kreutzers ..	$\frac{500}{1000}$	2·666	1·333	1·333	0 0 4⅛
10 ,, ..	$\frac{400}{1000}$	1·666	0·667	0·999	0 0 2⅜
COPPER COINS:—					
4 Kreutzer ..					0 0 0⅘
1 Kreutzer ..					0 0 0⅕

The 8 florin piece is 21 millimetres in diameter, and the 4 florin piece 19; the pfund of 500 grammes of gold consisting of $\frac{9}{10}$ths gold and $\frac{1}{10}$th copper is coined into 77½ pieces of eight florins and 155 pieces of 4 florins.

The proportion of 900 parts pure metal in 1000 or 90 in 100 is the same used by France, Germany, Belgium, Switzerland, Italy, Spain, Greece, United States of America; Sweden, Norway, and Denmark.

The following old coins, still in circulation, are received at the under-mentioned rates:—

GOLD COINS:—	florins.	kreutz.	Sterling. £	s.	d.	
Crown	= 13⅘	0	= 1	7	0	These are of the 45 gulden standard, and were replaced by the 8 and 4 florin pieces in March, 1870.
Half-crown	= 6$\frac{9}{10}$	0	= 0	13	6	

The Ducat (4¼ florins) with an agio of from 6 to 10 Kreutzers	= 4	70 = 0	9	2¼	This is of the old 20 gulden or Convention standard.
SILVER COINS :—					
Double Thaler	= 3	0 = 0	5	11¼	These are coins of the 45 florin standard.
Thaler*	= 1	50 = 0	2	11	
Crown of Brabant	= 2	30 = 0	4	5⅔	
The Convention Crown	= 4	10 = 0	4	1	
Florin of 60 Kreutzers	= 1	5 = 0	2	0½	
The 20 Kreutzer piece (new coin)	= 0	35 = 0	0	8⅓	These are of the old 20 gulden or Convention standard.
The 20 Kreutzer piece (old coin)	= 0	34 = 0	0	7$\frac{14}{15}$	
The 10 Kreutzer piece	= 0	17 = 0	0	3$\frac{29}{30}$	
The 6 Kreutzer piece	= 0	10 = 0	0	2⅓	
The 5 Kreutzer piece	= 0	8½ = 0	0	2$\frac{1}{20}$	
The 3 Kreutzer piece	= 0	5 = 0	0	1⅕	

VALUE OF ENGLISH MONEY AT 1s. 8D. THE GULDEN IN PAPER.

English.	*Austrian Paper.*	*English.*	*Austrian Paper.*
¼d. =	1¼ Kreutzers.	2s. 6d. =	1½ gulden.
1d. =	5 ,,	5s. =	3 ,,
3d. =	15$\frac{2}{7}$,,	10s. =	6 ,,
4d. =	20 ,,	£1 =	12 ,,
6d. =	30 ,,	£5 =	60 ,,
1s. =	60 ,,	£10 =	120 ,,
2s. =	1 fl. 20 ,,		

EMPIRE OF GERMANY.

The present Imperial system of currency and accounts which is the same for the whole of the German Empire was established by the laws of 4th Dec., 1871; 9th July, 1873; and 30th January, 1875. The system is based upon a gold standard; and since 1st January, 1876, gold has been the sole standard of value and principal legal tenders. The unit

* The Maria Theresa dollar is still minted, and bears the same date and design as when first issue in 1780.

of account is a Mark (or Reichsmark), it is the tenth part of a gold coin, the 10 Mark piece, of which 139½ contains a Zollverein pound, equal to 500 grammes, or 7716 Troy grains of pure gold. It is divided into 100 Pfennige as follows :—

Sub-divisions.		*Systematic name.*		*English value.*
100 Pfennige*	=	1 Reichsmark	=	0 1† 0

GOLD COINS.

The gold coins are pieces of 20, 10. and 5 Reichsmarks, the English value of which for small sums may be taken as 20s., 10s., and 5s. respectively; but their more exact value is 19s. 7d., 9s. 9¼d., 4s. 10¾d.

Gold is the sole standard of value, and a universal legal tender without any limitation. The 20-Mark piece contains 7·16846 grammes of fine gold, and 0·79649 grammes of alloy; its total full weight is 7·96495 grammes, and comparing its contents of fine gold with the quantity of fine gold contained in the British sovereign, the 20-Mark piece of full weight is less valuable than the British sovereign of full weight by 5·04d. sterling; or, in the case of coins of least current weight, the difference in value is 4·71d. The total full weight of the 10-Mark piece‡ is 3·98248 grammes; it contains 3·58423 grammes of fine gold, and 0·39824 grammes of alloy.

A Zollverein pound of pure gold is coined into 139½ pieces of 10 Marks, or 69¾ pieces of 20 Marks. The mixture of pure

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* This system introduced a gold standard into Germany where there was but a very small quantity of gold in circulation. It made gold a legal tender and standard of value—a money instead of an article of commerce—and it extended to the whole of Germany one uniform system of currency and accounts. It introduced a common gold coin for the various States of the Empire, whose silver coinage had been so different, and, by dropping the Thaler denomination for the gold coinage and giving it a new name and subdivisions, it harmonised and united the systems of North Germany, the Hanse Towns, and South Germany. Under the old system the smallest coin in North Germany was the Pfennige, of which there were 120 in a Mark, while in South Germany the equivalent of a Mark was 35 Kreuzers or 140 Pfennige. In the new system the smallest coin for all Germany is a Pfennig, the one-hundreth part of a Mark, and so the value of the smallest coin is increased in the new system by 20 per cent. for North Germany, and by 40 per cent. for South Germany.

† In Bavaria a sub-division of the Pfennige into two half-Pfennige may be made if necessary.

‡ The more exact intrinsic value of the Mark is 11¾d. English.

‖ The 10-Mark piece is sometimes called a *crown*, and the 20-Mark piece a double crown.

gold and alloy in the coins is in the proportion of 900 parts of gold to 100 parts of copper. Accordingly, 125·55 pieces of 10 Marks, or 62·775 pieces of 20 Marks, weigh one Zollverein pound.

The Imperial gold coins bear upon one side the Imperial Eagle, with the inscription, "Deutsches Reich," and a statement of the value in Marks, and the year of the coinage; on the other side, the likeness of the sovereign princes, or the symbols of sovereignty of the Free Towns, with a corresponding device and the stamp of the Mint.

The difference more or less of the pieces as issued from the Mint must not exceed in weight 2½ thousandth-parts, and, in fineness, 2 thousandth-parts.

Imperial gold coins that are not deficient more than *five-thousandth*-parts from the nominal weight (Passirgewicht) are accepted as full value in all payments. Imperial gold coins which, from long circulation, have become lighter than the *pass weight*, are withdrawn, and replaced at the expense of the Empire.

SILVER COINS.

The silver coins are pieces of 1, 2, and 5 Reichsmarks, and 50 and 20 Pfennige, the English value of which may be taken as 1s., 2s., 5s.; 6d. and 2½d. respectively.

Silver coins are token money, and they are a legal tender for no more than 20 Reichsmarks. For some time after the introduction of the Imperial currency, some of the silver coins of the old Thaler currency were allowed to continue in circulation, and were a legal tender in payment of sums not exceeding 20 Reichsmarks at a fixed tariff of 3 Marks per Thaler.

A pound of fine silver is coined into 20 Five Mark pieces, or 100 One Mark pieces, or 200 Half-Mark pieces.

The total amount of silver currency put into circulation is not to exceed 10 Marks per head of the population of the Empire.

NICKEL COINS.

The nickel coins are pieces of 10 and 5 Pfennige, equal respectively to 1¼d. and ½d. English.

BRONZE COINS.

The bronze coins are pieces of 2 and 1 Pfennige, equal respectively to ¼d. and ⅛d. English.

The total value of nickel and copper coins not to exceed 2½ Marks per head of population.

COMPARATIVE TABLE OF IMPERIAL GERMAN MONEY, BASED ON THE TARIFF CONTAINED IN THE LAW OF 5TH DECEMBER, 1871.

Imperial German Money.	Old South German Currency.	Old North German Currency.	Lubec or Hamburg Customary Currency.	Bremen Value, Gold Reckoning.	English Value.
GOLD COINS.	*Fl. Kr. Pf.*	*Th. Sg. Pf.*	*Mk. Sch. Pf.*	*Thr. Gr. Sc.*	*£ s. d.*
20 Reichsmarks	11 40 0	6 20 0	16 10 8	6 1 3	1 0 0
10 ,, ..	5 50 0	3 10 0	8 5 4	3 0 4	0 10 0
5 ,, ..	2 55 0	1 20 0	4 2 8	1 37 4	0 5 0
SILVER COINS.					
5 Reichsmarks	2 55 0	1 20 0	4 2 8	1 37 4	0 5 0
2 ,, ..	1 10 0	0 20 0	1 10 9	0 45 0	0 2 0
1 ,, ..	0 35 0	0 10 0	0 13 4	0 25 3	0 1 0
50 Pfennige ..	0 17 2	0 5 0	0 6 8	0 12 4	0 0 6
20 ,, ..	0 7 0	0 2 0	0 2 7	0 5 $\frac{3}{5}$	0 0 2$\frac{1}{2}$
NICKEL COINS.					
10 Pfennige ..	0 3 2	0 1 0	0 1 4	0 2 $\frac{1}{5}$	0 0 1$\frac{1}{4}$
5 ,, ..	0 1 3	0 0 0	0 0 8	0 1 $\frac{1}{5}$	0 0 0$\frac{1}{2}$
BRONZE COINS.					
2 Pfennige ..	0 0 2$\frac{4}{5}$	0 0 2$\frac{1}{2}$	0 0 3	0 0 $\frac{1}{5}$	0 0 1$\frac{1}{4}$
1 ,, ..	0 0 1$\frac{2}{5}$	0 0 1$\frac{1}{4}$	0 0 1$\frac{1}{2}$	0 0 $\frac{1}{5}$	0 0 1$\frac{1}{8}$

TABLE OF THE WEIGHT, FINENESS, AND DIAMETER IN MILLIMETERS OF IMPERIAL GERMAN MONEY.

	Weight. Pound of 500 grammes.	Fineness. Parts in 1000.		Diameter in Millimeters.
GOLD COINS.		*Pure metal.*	*Alloy.*	
20 Reichsmarks.....	·015929	900	100	22$\frac{1}{2}$
10 ,, ...	·007964$\frac{1}{2}$	,,	,,	19$\frac{1}{2}$
5 ,, ...	·003982	,,	,,	17
SILVER COINS.				
5 Reichsmarks.....	·0555	,,	,,	38
2 ,, ...	·02222	,,	,,	28
1 ,, ...	·01111	,,	,,	24
50 Pfennige	·0055	,,	,,	20
20 ,, ...	·0022	,,	,,	16
NICKEL COINS.				
10 Pfennige	·0088	25	75	21
5 ,, ...	·0055	,,	,,	18
BRONZE COINS.				
2 Pfennige	·0066			20
1 ,, ...				17$\frac{1}{2}$

The alloy in the gold coins is copper. The nickel coins are composed of 25 parts of nickel to 75 of copper. Of the 20 Pfennige pieces 450 weigh a pound; 125 Ten Pfennige pieces, or 200 Five Pfennige pieces weigh a pound. The copper coins are composed of 95 parts copper, 1 of tin, 1 of zinc; 150 Two Pfennige pieces, or 250 One Pfennige pieces, weigh a pound.

BANK NOTES.

The Imperial bank (Reichsbank) is a central bank of issue for the whole of the German Empire; its notes are only issued for amounts of 100, 200, 500, and 1000 Reichsmarks, or a multiple of 1000 Reichsmarks; and, since January 1st, 1876, notes of lower value than 100 Marks, or expressed in any other denomination than Reichsmarks, are not a legal tender.

No one is bound to accept bank notes in payment; payments must be made in coin, if required.

The Imperial bank redeems its notes, at the Chief Office in Berlin, on presentation, and at the Branch Offices throughout the Empire, as far as its means extend—in both cases in German currency—at their full nominal value. It accepts injured notes at their full nominal value on presentation of the larger part, or of the smaller part on proof that the large part has been destroyed.

Soiled or damaged notes are not re-issued.

The Imperial bank buys bar gold at 1392 Marks for one pound (500 grammes) of pure gold (the cost of alloy being borne by the parties presenting the bars), and pays for it in standard gold coin, which is minted at the rate of 1395 Marks per pound of pure gold; on this, the term in favour of the bank is 0·21 per cent.

The Imperial bank, both at the chief office and its branches, accepts at their full nominal value the notes of all private-note banks (duly authorised) in the several States of the Empire.

Private-note banks, having the right of issue, can only carry on their business, and their notes can only be used in payments in the State in which the right of issue has been granted.

The capital of the Imperial bank is 120 millions of Marks, divided into 40,000 shares of 3000 Marks each. Out of the net revenue of the bank at the close of each year, the shareholders receive a dividend of 4½ per cent of the capital. Out of the rest of the sub-revenue, 20 per cent. is appropriated to the reserve fund, as long as the reserve fund does not amount to *one-fourth* of the capital. One-half of the balance remaining

is to be paid to the shareholders as long as their dividends do not exceed 8 per cent.; the other half goes to the Exchequer. Three-fourths of the further remaining amount goes to the Exchequer, and one-fourth to the shareholders. If the net-revenue at any time does not amount to 4½ per cent. of the capital, the deficiency is made up from the reserve fund. The premium upon shares above their nominal value goes to the reserve fund. Dividends after four years from the date they are due, fall under the right of prescription in favour of the bank.*

ELSASS—LOTHRINGEN (ALSACE—LORRAINE.)

By the law of 10th November, 1874, the Imperial currency system was extended to this province, and as a temporary measure, while a sufficient quantity of Imperial coins in silver, nickel, and bronze was being provided, the subsidiary coins of the franc currency were permitted to circulate at fixed rates—viz., the 2 franc piece at 1 mark 60 pfennige, the franc at 80 pfennige, the half-franc at 40 pfennige, and the 20, 10, and 5 centime pieces at the rates of 16, 8, and 4 pfennige respectively; but the coins of the franc currency were demonetised from and after the 1st January, 1876, since which date Imperial German coins have formed the only legal currency of the province.

SYSTEM OF CURRENCY BEFORE 1872.

Formerly silver was the standard of value, and the monetary system was based on the Zöllpfund or Münzpfund, that is, 500 grammes, or 7,716 Troy grains of fine silver.

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* Under the Law of 1874, Government notes (Reichskassenscheine) of 5, 25, and 50 Reichsmarks were issued in substitution for, and to supersede, the notes or "States paper money" of different denominations in the several States, and as a means of facilitating the transition to the Imperial system. These notes, which continued to circulate until 1876 were accepted at all public offices of the Empire and of the various States at their full nominal value, and were payable at the Central Treasury (Reichshauptkasse) on demand in coin. In private transactions their acceptance was optional.

For North Germany* the Zöllpfund of fine silver was coined into 30 Thalers: this was called *North German value*, or *Thirty Thaler basis.*

For South Germany † the Zöllpfund of fine silver was coined into 52½ Florins: this was called *South German value*, or *Fifty-two-and-a-half Florin basis.*

A North German Thaler was equal to 1⅓ Austrian Florins, or 1⅔ South German Florins.

There were pieces of ⅓ and ⅙ Thaler (*North German value*), ⅔ and ⅓ Florin (*South German value*), and ½ and ¼ Florin (*Austrian value*).

In North Germany accounts were kept as follows:—

		s.	d.	
12 Pfennige	=1 Silbergroschen	=0	1⅓	English.
30 Silbergroschen	=1 Thaler	=3	0	,,

In South Germany accounts were kept as follows:—

			s.	d.
4 Pfennige	= 1 Kreuzer	=	0	⅓
60 Kreuzers	= 1 Florin	=	1	8

The value of the old Currency of North and South Germany is given in the following table:—

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* The States of NORTH GERMANY, otherwise called the North Zollverein States, are the following:—The Kingdoms of Prussia, Saxony, and Hanover, Electorate of Hesse, Grand Duchy of Saxony, Duchies of Saxe-Altenburg, Saxe Gotha, Brunswick, Oldenburg, with Birkenfeld, Anhalt-Dessau-Gotha, and Anhalt-Bernburg, and the Principalities of Schwartzburg-Sonderhausen and Schwartzburg-Rudolstadt Waldeck, and Pyrmont, Reuss (elder branch), Reuss (younger branch), Schaumberg-Lippe and Lippe.

† The States of SOUTH GERMANY, otherwise called the South Zollverein States, are the following:—The Kingdoms of Bavaria and Wurtemburg, Grand Duchies of Baden and Hesse, Duchy of Saxe-Coburg; the Hereditary Prussian States, Duchy of Nassau, Principality of Schwartzburg-Rudolstadt, Electorate of Hesse-Homburg, and the Free City of Frankfort. The Zollverein (customs-union) was a league of the States of Germany first formed in 1833, for assimilating, uniting, and simplifying the fiscal arrangements of the several States of Germany. It came into operation on the 1st January, 1834. It abolished all restrictions on internal communication, established a common system of duties on exports and imports, and provided for a common system of money, weights, and measures.

TABLE OF OLD COINS OF NORTH AND SOUTH GERMANY, COMPARED WITH IMPERIAL GERMAN MONEY AND ENGLISH MONEY.

	Old North German Value.			Old South German Value.			New Imperial German Value.		English Value.		
Gold Coins.	*Th.*	*sgr.*	*pf.*	*Fl.*	*kr.*	*pf.*	*Mks.*	*pfg.*	*£*	*s.*	*d.*
Fredericks d'or ..	5	20	0	10	0	0	17	0	0	17	0
Double do.	11	10	0	20	0	0	34	0	1	14	0
Half do.	2	25	0	5	0	0	8	50	0	8	6
Union Crown ..	9	6	0	16	6	0	27	0	1	7	0
Half do.	4	18	0	8	3	0	13	50	0	13	6
Silver Coins.											
Thaler	1	0	0	1	45	0	3	0	0	3	0
Double Thaler ..	2	0	0	3	30	0	6	0	0	6	0
10 Silver Groschen	0	10	0	0	35	0	1	0	0	1	0
5 do. ..	0	5	0	0	17	2	0	50	0	0	6
$2\frac{1}{2}$ do. ..	0	2	6	0	8	3	0	25	0	0	3
2 do. ..	0	2	0	0	6	4	0	20	0	0	$2\frac{1}{2}$
1 do. ..	0	1	0	0	3	2	0	10	0	0	$1\frac{1}{4}$
$\frac{1}{2}$ do. ..	0	0	6	0	1	3	0	5	0	0	$0\frac{1}{4}$
Florin	0	17	2	1	0	0	1	$71\frac{3}{7}$	0	1	8
Half do.	0	8	7	0	30	0	0	$85\frac{5}{7}$	0	0	10
Quarter do. ..	0	4	4	0	15	0	0	$42\frac{6}{7}$	0	0	5
6 Kreuzers ..	0	1	9	0	6	0	0	$17\frac{1}{7}$	0	0	2
3 do.	0	0	10	0	3	0	0	$8\frac{4}{7}$	0	9	1
1 do.	0	0	0	0	1	0	0	$2\frac{6}{7}$	0	0	$0\frac{1}{2}$
Copper Coins.											
3 Pfennige (South).	0	0	$3\frac{3}{5}$	0	0	3	0	$2\frac{1}{7}$	0	0	$0\frac{3}{10}$
2 do. do. ..	0	0	$2\frac{2}{5}$	0	0	2	0	$1\frac{2}{7}$	0	0	$0\frac{1}{5}$
1 do. do. ..	0	0	$1\frac{1}{5}$	0	0	1	0	$\frac{5}{7}$	0	0	$0\frac{1}{10}$
4 do. (North).	0	0	4	0	0	$3\frac{4}{7}$	0	$3\frac{1}{3}$	7	0	$0\frac{1}{3}$
3 do. do. ..	0	0	3	0	0	$2\frac{1}{2}$	0	$2\frac{1}{2}$	0	0	$0\frac{1}{4}$
2 do. do. ..	0	0	2	0	0	$1\frac{2}{3}$	0	$1\frac{2}{3}$	0	0	$0\frac{1}{6}$
1 do. do.	0	0	1	0	0	$\frac{5}{6}$	0	$\frac{5}{6}$	0	0	$0\frac{1}{12}$

BANK NOTES BEFORE THE INTRODUCTION OF THE IMPERIAL SYSTEM.

The Old Bank Notes were for 1, 5, 10, 20, 25, 50, 100, 200 and 500 thalers, in North Germany; and for 1, 5, 10, 25, 50 and 100 *florins, in South Germany.*

HAMBURG AND LUBECK.

Since 15th February, 1873, for Hamburg; and 1st January, 1875, for Lubeck; the system of coinage and accounts has been that of the German Empire (see p. 32).

The par of exchange is about 20 Reichsmarks 40 Pfennige per pound (£) sterling.

The old system was as follows:—

12 Pfennige = 1 Schilling; 16 Schillinges 1 Mark = 1s. 2d.

Reckonings and payments were also recorded in Thalers of 3 Marks of 16 Schillinges.

The old money of Hamburg had a twofold valuation, the one called *Currency* and the other *Banco*. *Currency* value was the value of the light and foreign coins in actual circulation; the coins in circulation passed only for their true value measured in Marks Banco. In *currency value* the Cologne Mark weight (Hamburg standard), viz., 3608 grains Troy of pure silver, was coined till 1856 into 34 Marks, and after that date into 35 Marks.

The Mark Banco represented silver $\frac{4}{5}\frac{7}{2}$ths pure, and was worth 1s. 5½d. sterling; it was not a coin, but only a money of account or credit money. The Cologne Mark weight of silver was supposed to be equivalent to $27\frac{3}{4}$ Marks Banco. It was represented by a deposit of bullion and a bill on Hamburg; in the Hamburg Giro-Bank* all the Hamburg merchants used to record their money transactions in Marks Banco. The old monetary system of Hamburg, which dated its origin from the year 1619, was broken up in conformity with the German Coinage Law of 4th December, 1871, and a Law passed in 1872 by the Hamburg legislature (the Senate and Municipal Council). After the 15th February, 1873, debts expressed in Marks Banco were paid in Prussian half-thalers, and from that date the new German currency (Reichmarks and Pfennige) was introduced in Hamburg.

The gold coins were the *Pistole* and the *Ducat*. The Pistole was equal to 10 Marks, 14 Schillinges (*Bank* value). The Ducat was equal to 6 Marks, 4 Schillinges, Bank value, or $100\frac{7}{16}$ Schillinges, Currency value, and was worth about 9s. 4d. sterling,

The silver coins were the *Double Thaler*, equal to 5 Marks (currency value); the *Thaler* of 2½ Marks; the *Mark;* the 8 *Schilling Piece;* the 4 *Schilling Piece*; the 2 *Schilling Piece;*

* The course of business of the Giro-Bank of Hamburg and of the Bank of Amsterdam forms a chapter in Adam Smith's "Wealth of Nations."

the *Schilling;* the ½ *Schilling*, or *Sechsling*; and the ¼ *Schilling*, or *Dreiling*. The *Mark* contained 750 parts by weight out of 1000 of pure silver, the 8 Schilling piece contained 625, the 4 Schilling piece 562½, the 2 Schilling piece 437½, and the 1 Schilling piece 250 of such parts.

The difference between the *Bank value* and the *Currency value* was called the *Bank Agio*, and was perpetually varying with the price of pure silver.

COMPARATIVE VALUE OF HAMBURG AND LUBECK OLD MONEY, IMPERIAL GERMAN MONEY, AND ENGLISH MONEY.

Old Money of Hamburg and Lubeck.		Imperial German Money.		English Money.		
Marks.	*Schillings.*	*Reichsmarks.*	*Pfennige.*	£	*s.*	*d.*
0	¼	0	1⅞	0	0	¼
0	½	0	3¾	0	0	½
0	1	0	7½	0	0	1
0	2	0	15	0	0	2
0	4	0	30	0	0	3½
0	8	0	60	0	0	7
1	0	1	20	0	1	2½
(*Thaler*) 2	0	2	40	0	2	4
2½	8	3	0	0	3	0
3	..	3	60	0	3	7
4	..	4	80	0	4	9
(*Double*	..					
Thaler) 5	..	6	0	0	6	0
6	..	7	20	0	7	2
7	..	8	40	0	8	4
8	..	9	60	0	9	7
9	..	10	80	0	10	9
10	..	12	0	0	11	9
20	..	24	0	1	3	6
50	..	60	0	2	18	10
100	..	120	0	5	17	8
1,000	..	1,200	0	58	16	6
10,000	..	12,000	0	588	4	9

* In this table for sums over 10 Reichsmarks the English equivalents are computed at the par of 20 Reichsmarks 40 Pfennige per pound sterling; for lower sums, the rate of one shilling sterling for a Reichsmark has been considered near enough; the more exact value of the Reichsmark is a little over 11¾d.

BREMEN.

The currency and the denominations of money in which accounts are kept have been, since 1st July, 1872, the same as those of Imperial Germany. The old system was as follows:—4 Schwaren = 1 Grote; 72 Grotes = 1 Thaler = 3s. 3d. sterling.

The gold coins were Danish, Hanoverian, and other *Pistoles*, of 5 Thalers, and Ducats 2⅔ Thalers at a variable agio or premium.

The silver coins were the ½ Thaler of 36 Grote; the ⅙ *Thaler* of 12 Grote, worth 6⅖d. sterling; the 6 Grote Piece worth 3⅗d. sterling; the Grote worth ½d. sterling (⅝d.)

TABLE OF OLD BREMEN MONEY COMPARED WITH IMPERIAL GERMAN MONEY AND ENGLISH MONEY.

Old Bremen Money.			Imperial German Money.		English Money.		
Thaler.	*Grote.*	*Schwaren.*	*Reich-marks.*	*Pfennige.*	£	s.	d.
0	0	1	0	1	0	0	⅕
0	0	2	0	2	0	0	⅖
0	0	3	0	3	0	0	⅗
0	0	4	0	4	0	0	⅘
0	1	0	0	5	0	0	1
0	6	0	0	28	0	0	3⅗
(⅙ thaler) 0	12	0	0	55	0	0	6⅗
(¼ thaler) 0	36	0	1	66	0	1	7½
1	0	0	3	32	0	3	3
5	0	0	16	61	0	16	3½
10	0	0	33	21	1	12	6
15	0	0	49	82	2	8	9½
20	0	0	66	43	3	4	0
50	0	0	166	7	8	3	5
100	0	0	332	14	16	6	10
1,000	0	0	3,321	43	162	16	3

The copper coins were pieces of 2½ and 1 Schwaren.

SPAIN.

By a decree dated 19th October, 1868, the money of Spain was assimilated to that of France, Italy, Belgium, and Switzerland. The Peseta of 4 Reals, which is equivalent to a franc, was declared the monetary unit with subdivisions as follows:—

Spanish value		*Systematic name.*		*English value.* £	s.	d.
		1 Centimo	=	0	0	$\frac{19}{200}$
100 Centimos	=	1 Peseta*	=	0	0	$9\frac{1}{4}$

GOLD COINS.

The Gold coins are pieces of 100, 50, 20, 10, and 5 Pesetas. Equal respectively to £4; £2; 16s.; and 8s. English.

SILVER COINS.

The Silver coins are pieces of 5, 2, 1 Pesetas, and of 25 and 20 Centimos; equal respectively to 4s., 1s. $7\frac{1}{5}$d., $2\frac{1}{2}$d. and 2d. English.

BRONZE COINS.

The Bronze coins are pieces of 10, 5, 2, and 1 Centimos. equal respectively to 1d., $\frac{1}{2}$d., $\frac{1}{5}$d., and $\frac{1}{10}$d. English.

In the Gold coins the allowance for variation either over or under the exact weight, is one-thousandth for the 100 peseta and 50 peseta, two-thousandths for the 20 peseta and 10 peseta, and three-thousandths for the 5 peseta piece; and the allowance for variation either over or under the standard of fineness, is two-thousandths.

In the Silver coins the variation of weight tolerated is for the 5 peseta piece three-thousandths, and the variation of fineness is two-thousandths: the variation of weight for the 2 and 1 peseta pieces is five-thousandths; for the 50 centimo piece and for the 20 centimo piece it is ten-thousandths. The variation of fineness for the 2 and 1 peseta, and for the 50 and 20 centimo pieces, is three-thousandths.

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* In virtue of a decree of the Cortes, above quoted, the Spanish money was recoined, and a new Monetary System, as given above, was adopted, and became the only legal Monetary System of Spain and her Colonies from 31st December, 1870.

In the Bronze coins the variation of weight tolerated is 10-thousandths for the 10 and 5 centimo pieces, and 15-thousandths for the 2 and 1 centimo pieces. The variation from standard fineness is 10-thousandths for the 10 and 5 centimo pieces, and 5-thousandths for the 2 and 1 centimo pieces.

The following table shows the standard of fineness, the weight, and English value of the Spanish coins :—

Denomination of Coin.	Standard of fineness in thousandth parts.	Weight in grammes.	Diameter in Millemetres.	English value.
				£ s. d.
GOLD COINS :—				
100 Pesetas	900	32·25806	35	3 19 2
50 ,, ...	,,	16·12903	28	1 19 7
25 ,, ...	,,	8·064515		0 19 9½
20 ,, ...	,,	6·45161	21	0 15 10
10 ,, ...	,,	3·22580	19	0 7 11
5 ,, ...	,,	1·61290	17	0 3 11½
SILVER COINS :—				
5 Pesetas	900	25	37	0 3 11½
2 ,, ...	835	10	27	0 1 7
1 ,, ...	,,	5	23	0 0 9½
50 Centimos ..	,,	2·50	18	0 0 4¾
20 ,, ...	,,	1·00	16	0 0 $9\frac{9}{10}$
BRONZE COINS :—				
10 Centimos ..	950 Copper	10	30	0 0 1
5 ,, ..	40 Tins	5	25	0 0 0½
2 ,, ..	10 *Zinc*	2	20	0 0 0¼
1 ,, ..		1	15	0 0 $0\frac{1}{10}$

BANK NOTES.

The Bank notes in circulation vary in amount from 25 pesetas or 100 reals, to 1000 pesetas or 4000 reals.

OLD MONETARY SYSTEM OF SPAIN.

The old monetary system was based on the *Real-Vellon* and *Hard Dollar*, and accounts were generally kept in Reals divided into 34 Maravedis or 100 Centimos, but in Alicant, Arragon, Barcelona, and Valencia, they were kept in *Libras* divided into 20 *Sueldos*, and each *Sueldo* into 12 *Dineros*.

There were four pincipal classes of the *Real*, namely, the *Real-Vellon*, the *Real-New-Plate*, the *Real-Old-Plate*, and the *Real-Mexican-Plate*.

The *Real-Vellon* was both a money of account and a coin; it was the 20th part of a Silver Hard Dollar, it was also the 20th part of a Gold Dollar (Coronilla), and was equal to 2½d. sterling.

The *Real-New-Plate* was a coin, but not a money of account; it was the $\frac{1}{10}$th part of a Hard Dollar, and was equal to 5d. sterling.

The *Real-Old-Plate* was a money of account, and a denomination used generally in exchange, but not a coin, it was $\frac{5}{8}$ths of a Hard Dollar, and was equal to $4\frac{7}{10}$d. sterling. When the term *Plate* only was used, *Old Plate* was meant.

The *Real-Mexican-Plate* was the chief money of account in Spanish America, but not a coin; it was the $\frac{1}{8}$th part of a Hard Dollar, and was equal to 6¼d. sterling.

1 Real-Mexican-Plate = 2½ Reals-Vellon = 1¼ New-Real-Plate = $1\frac{21}{64}$ Reals-Old-Plate.

The Doubloon de Plata Sencillo was equal to 60 Reals-Vellon or 12s. 6d. sterling; the Peso-Sencillo to 15 Reals-Vellon; and the Ducado de Vellon to 11 Reals-Vellon.

Besides the above-mentioned principal classes of Reals, there were five classes of Reals that were moneys of account and exchange, but not coins, namely, the Real of Alicant, equal to $\frac{32}{425}$ of a Hard Dollar, or 3·8554d. sterling; the Real of Catalonia, equal to $\frac{48}{425}$ of a Hard Dollar, or 4·0335d. sterling; the Real Ardite of Catalonia, equal to $\frac{32}{425}$ of a Hard Dollar, or 2·6890d. sterling; the Real of Valencia, equal to $\frac{24}{425}$ of a Hard Dollar, or 2·8235d. sterling; and the Real of Gibraltar equal to $\frac{1}{12}$ of a Hard Dollar, or 4½d. sterling.

The Libra of Alicant, Cadiz, and Valencia, was the same as the Dollar of Plate or exchange, and was equal to 37·647d. sterling, or $\frac{4}{5}$ of a Hard Dollar; the Libra of Catalonia was equal to 26⅔d. sterling, or $\frac{8}{15}$ of a Hard Dollar; the Libra of Arragon was equal to $47\frac{1}{17}$d. sterling, or $\frac{16}{17}$ of a Hard Dollar;

the Libra of Navarre was equal to 7·842d. sterling, or $\frac{8}{81}$ of a Hard Dollar.

The moneys of exchange were the Peso de Plata or Piastre (Dollar) of exchange, equal to 272 Maravedis Old Plate, or 512 Maravedis-Vellon; the Doubloon de Plata or Pistole of exchange equal to 32 Reals, or 1088 Maravedis Old Plate, or 16 Reals 8 Maravedis-Vellon, or $40\frac{2}{17}$d. sterling; the Ducado de Plata or Ducat of exchange, equal to 11 Reals 1 Maravedis, or 20 Reals $25\frac{5}{17}$ Maravedis-Vellon, or $51\frac{9}{170}$d. sterling.

OLD MONEYS OF ACCOUNT.

Spanish value.		*Systematic name.*		*English value.*
		1 Centimo	=	$\frac{1}{170}$d.
100 Centimos, or 34 Maravedis	=	1 Real-Vellon	=	$2\frac{1}{4}$d.
10 Reals-Vellon	=	1 Escudo*	=	2s. 1d.

The Gold coins were the (*a*) *Onza*, or Doubloon of 320 Reals worth 66s. 8d. Sterling; (*b*) the *Half-Onza* of 160 Reals, worth 33s. 4d. sterling; the *Isabel* of 100 Reals, worth 20s. 10d. sterling; (*c*) the *Quarter Onza* of 80 Reals, worth 16s. 8d. sterling; (*d*) the *One-Eight Onza* of 40 Reals, worth 8s. 4d. sterling; the 21 ¼ *Real-Piece*, worth 4s. 5d. sterling; and (*e*) the *Dollar* of 20 Reals, worth 4s. 2d. sterling.

The Silver coins were the *Dollar* (duro) of 20 Reals-Vellon worth 4s. 2d. sterling; the *Escudo* of 10 Reals, worth 2s. 1d. sterling; the *Peseta de Columnas* of 5 Reals, worth 1s. 0½d.; the *Peseta* of 4 Reals, worth 10d. sterling; the 2½ *Real-Piece*, worth 6d. sterling; the *Half-Peseta*, or 2 *Real-Piece*, worth 5d. sterling; and the 1 *Real-Piece*, worth 2½d. sterling.

The Copper coins were the *Half-Real*, worth 1¼d. sterling; the *Quarter-Real* and pieces of 2 *Cuartos** (equal to 47 Centimos), and 1 *Cuarto* (equal to 23½ Centimos).

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* In 1865 the Escudo was made the highest unit of account. Previously the Real and the Centimo had been the only denominations used in keeping accounts.

GIBRALTAR.

By an order in Council dated 21st February, 1872, and which came into operation on 1st May, 1872, the standard of value is the Spanish gold coin commonly called *doblon d' Isabel* weighing 128·7 Troy grains, and containing by weight 90 parts of pure gold, and 10 parts of alloy.

The denominations of account are Dollars, Reals-de-Vellon, and Decimas, and eventually perhaps, Reals-de-Vellon and Decimas only.

Gibraltar value.	*Systematic name.*	*English value.* £	s.	d.
	Decima de Real-Vellon =	0	0	$0\frac{3}{40}$
10 Decimas de Real-Vellon	=1 Real de Vellon =	0	0	$2\frac{2}{4}$
20 Reals de Vellon †	=1 Dollar =	0	4	$0\frac{8}{9}$
100 Reals de Vellon or 5 Dollars	=1 Doblon† =	1	0	$4\frac{4}{9}$

The Sanitary Commissioners of Gibraltar keep their accounts in Reals de Vellon and Centesimas, the Decima being too large a unit to determine rates.

Army and Navy accounts at Gibraltar are kept in pounds, shillings, and pence, sterling.

Under the order in Council of 21st February, 1872, the following are the coins authorised to be current in Gibraltar, and described as Her Majesty's current gold, silver, and copper coins:—

(*a*) Also called Quadruple Pistole.
(*b*) Also called Media-Onza, or Half-Doubloon.
(*c*) Also called Pistole, or Doubloon de Ochenta.
(*d*) Also called Cudrenta, or Doubloon de Escudo.
(*e*) Also called Coronilla, Escudito, Durillo, or Doubleon de Vienti.
* 8½ Cuartos were equal to 1 Real.
† 10 Reals de Vellon = 1 Escudo = 2s. 1d. sterling, but the Doblon d'Isabel and Escudo will hardly be adopted in mercantile accounts.

	Fineness.	Minimum Weight in Troy Grains.	Proportion to the Standard of Value.	English Value. £	s.	d.
GOLD COINS.						
Doblon d'Isabel or 10 Escudos	·9	128·7	.1	1	0	$4\frac{44}{49}$
4 Escudos (2 dollars)	·9	51·35	.4	0	8	2
2 ,, (Coronilla, or gold dollar	·9	25·65	·2	0	4	2
SILVER COINS.						
2 Escudos, pesu duro, or hard dollar	·9	398·50	·2	0	4	$0\frac{48}{49}$
1 Escudo, or half dollar	·9	199·0	·1	0	2	$0\frac{24}{49}$
2 Reals of Plate, or imaginary Gibraltar Reals	·898	95·0	·05	0	1	0
1 Real of Plate, or $1\frac{1}{2}$ imaginary Gibraltar Reals	·898	46·	·025	0	0	6
$\frac{1}{2}$ Real of Plate or Doçe	·898	22·	·0125	0	0	3
BASE SILVER COINS.						
4 Reals Vellon, Peseta, or Peseta of Provincial Plate	·81	79·50	·04	0	0	$9\frac{39}{49}$
2 Reals-Vellon	·81	39·75	·02	0	0	$4\frac{44}{49}$
1 Real-Vellon	·81	19·80	·01	0	0	$2\frac{22}{49}$
BRONZE COINS.						
$\frac{1}{2}$ Real-Vellon	·95	..	·005	0	0	$1\frac{1}{5}$
1 Cuartillo	·95	..	·0025	0	0	$0\frac{2}{5}$
1 Double Decima de Real	·95	..	·002	0	0	0
1 Decima de Real, or centesima de Escudo	·95	..	·001	0	0	$0\frac{1}{4}$
$\frac{1}{2}$ Decima de Real, or 5 melesimas de Escudo	·95	..	·0005	0	0	$0\frac{1}{5}$

The number of Doblon d'Isabel pieces that may be tendered at one payment is unlimited.

Not more than 10 of each of the 4, 2, and 1 Escudo pieces, and not more than 8 of each of the other silver coins may be legally tendered at a single payment. The bronze coins that may be legally tendered at one payment must not exceed 4 Reals-Vellon in value.

The rates assigned to British currency are ·98 of a Doblon d'Isabel for £1 sterling, and so in proportion for every

fraction of £1 sterling, being 1 shilling, or the multiples of 1 shilling; ·025 of a Doblon d'Isabel for 6d. sterling; and ·001 of a Doblon d'Isabel for every ¼d. sterling in any amount less than 6d.

OLD MONETARY SYSTEM.

Prior to 1872 accounts were kept in dollars, Reals of Plate, and Cuartos, and sometimes in dollars and cents as follows:—

16 Cuartos	=	1 Real	=	4⅓d. English.
12 Reals	=	1 Dollar	=	4s. 2d. ,,
100 Cents	=	1 Dollar	=	4s. 2d. ,,

The following table of the old Gibraltar currency shows the value in British sterling money, and also in the new currency of Gibraltar:—

Old Gibraltar Currency.			British Sterling Money.			New Gibraltar Currency.		
Dollars.	*Reals*	*Quartos.*	*£*	*s.*	*d.*	*Doblon.*	*Reals.*	*Decimas.*
0	0	1	0	0	0¼	0	0	1
0	0	4	0	0	1	0	0	4
0	0	8	0	0	2	0	0	8
0	0	12	0	0	3	0	1	2
0	1	0	0	0	4	0	1	6
0	1	4	0	0	5	0	2	0
0	1	8½	0	0	6	0	2	5
0	1	12	0	0	7	0	2	9
0	2	0	0	0	8	0	3	3
0	2	4	0	0	9	0	3	7
0	2	7	0	0	9¾	0	4	0
0	2	8½	0	0	10	0	4	1
0	2	12	0	0	11	0	4	5
0	2	15	0	0	11¾	0	4	8
9	2	15½	0	1	0	0	4	9
0	3	0	0	1	0¼	0	5	0
0	5	15	0	2	0	0	9	8
0	7	8	0	2	6	0	12	3
1	0	0	0	4	2	0	20	4
1	2	6	0	5	0	0	24	5
2	4	12	0	10	0	0	49	0
4	9	9	1	0	0	0	98	0
9	7	3	2	0	0	1	96	0
24	0	0	5	0	0	4	90	0
48	0	0	10	0	0	9	80	0
240	0	0	50	0	0	49	0	0
480	0	0	100	0	0	98	0	0
4800	0	0	1000	0	0	980	0	0

The Gold Coins that were legally current in Gibraltar prior to May, 1872, were the Gold Doblon* of Spain reckoned at 16 dollars, or £3 6s. 8d. sterling; the $\frac{1}{2}$*, $\frac{1}{4}$*, $\frac{1}{8}$ and $\frac{1}{16}$ Doblon pieces in like proportion; and the Doblon d'Isabel reckoned at 5 dollars or £1 0s. 10d. sterling.

The Silver Coins were the same as given, under the head silver coins in the above table, namely the Duro = 2 Escudos = 5 Pesetas = 4s. 2d. sterling; the Escudo = 2½ Pesetas = 2s. 1d. sterling; the Peseta = ·40 Escudo = 9½d. sterling; the Media Peseta = ·20 Escudos = 5d. sterling; and the Real = ·10 Escudos = ½ Peseta = 2½d. sterling.

There was a mass of silver coins representing fractional parts of the dollar, these fractional coins being greatly defaced and worn. The French 5-franc piece circulated nominally as $\frac{19}{20}$ of a dollar, but it was generally at a premium varying from 1 to 1½ per cent.

The copper coins were the Cuarto equal to ¼d. sterling; the Media Real equal to a 1d. sterling; the Cuartillo equal to ½d. sterling; the Decima equal to ¼d. sterling; and the Media Decima equal to ⅛d. sterling. There were also English pence, halfpence, and farthings; and a great quantity of Foreign copper coins current nowhere else and that passed in Gibraltar according to their size as compared with the Cuarto.

PORTUGAL.

The unit of account is the *Rei*.*

A *Mil-reis* is one thousand reis, and a *conto* is one million reis; a conto of reis is equal to £222 4s. 5½d. English; a *Moidore* is 4,800 Reis; a *Pinto* or *Cruzado Novo* 480 Reis, and a *Quartinho* is 1,200 Reis.

Subdivisions.		*Systematic name.*		*English value.* £ s. d.
1000 Reis.	=	1 Milreis.	=	0 4 5$\frac{1}{5}$

The Cruzado of Exchange (or Old Cruzado) was 400 Reis; a Mil-reis = 2$\frac{1}{12}$ New Cruzado or 2½ Old ones.

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* These had very nearly disappeared from circulation in Gibraltar, and the place of the Doubloon of 16 dollars had been taken by the Doblon d'Isabel of 5 dollars, coined under the Spanish laws of 1848 and 1864.

GOLD COINS.

The Gold Coins are the *Corôa* of 10.000 Reis ($10), the *Meia Corôa* of 5,000 Reis ($5), the *Quintos de Corôa* of 2,000 Reis ($2), the *Decimos de Corôa* of 1,000 Reis ($1), the *Peca* (formerly called a *Johanese* or *Joe*) of 8,000 Reis, and the *Meia Peca* of 4,000 Reis.

SILVER COINS.

The Silver Coins are pieces of 500, 200. 100, and 50 Reis, and called respectively 5, 2, 1, and ½ Testoon pieces.

BILLON COINS.

In billon there is the *Potaco* of 40 Reis.

BRONZE COINS.

The Bronze Coins are the *Ventem* of 20 Reis, Meio Ventem of 10 Reis, and the 5 and 3 Reis pieces.

The 5 Reis piece is the coin of lowest value in common use.

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* In accounts the symbol $ is used to note the thousands' place, a colon (:) the place of millions (contos), and a full point (.) the place of thousands of millions. Thus one thousand millions of Reis would be 1.000:000$000. No other denomination of money of account besides that of Reis is practically used in recording payments and receipts but in expressing them it is usual, when the amount is less than a moidore (4$800), to state them in cruzados ($400); cruzados novas, or pintos ($480), quartinhos (1$200). testoons or tostoes ($100), and ventems (20 Reis). Larger amounts are expressed in the moidore and its multiples, and sometimes in pounds sterling (libras) at the rate of 4$500.

Table of Portuguese coins, showing their weight, fineness and English value:—

Denomination of Coin.	Standard of fineness in	Weight in Grammes.	English value.		
			£	s.	d.
GOLD COINS:—					
Corôa of 10,000 Reis	$\frac{22}{24}$	17·735	2	4	$5\frac{1}{3}$
Meia Corôa of 75,000 Reis.		8·868	1	2	$2\frac{2}{3}$
Quintos de Corôa of 2,000 Reis		3·547	0	8	$10\frac{2}{3}$
Decimos de Corôa of 1000 Reis		1·774	0	4	$5\frac{1}{3}$
Peça of 8,000 Reis		14·188	1	15	$6\frac{1}{2}$
Meia Peça of 4,000 Reis ..		7·094	0	17	$9\frac{1}{6}$
British Sovereign at 4,500 Reis		7·981			
British Half-Sovereign at 2,250 Reis		3·995			
SILVER COINS:—					
Cincos Testoes of 500 Reis	$\frac{22}{24}$	12·5	0	2	$2\frac{2}{3}$
Dois Testoes of 200 Reis..		5·	0	0	$10\frac{2}{3}$
Testâo of 100 Reis		2·5	0	0	$5\frac{1}{3}$
Half-Testâo of 50 Reis ..		1·25	0	0	$2\frac{2}{3}$
BILLON COIN:—					
Potacâo of 40 Reis			0	0	$2\frac{2}{25}$
COPPER COINS:—					
Ventem of 20 Reis			0	0	$1\frac{1}{25}$
Meio-Ventem of 10 Reis..			0	0	$0\frac{13}{25}$
Cinco Reis of 5 Reis			0	0	$0\frac{13}{50}$
3 Reis.....			0	0	$0\frac{39}{250}$

The former coins of Portugal were as follows:—

Gold Coins.—Dobraon, worth 12,800 Reis; Half-dobraon, called also the Joanese or Moidore, worth 6,400 Reis; the Quarter-dobraon, worth 3,200 Reis; Escudo, worth 1,600 Reis;

Half-escudo, worth 800 Reis; and Crusado-velho, worth 400 Reis.

THE PORTUGUESE POSSESSIONS ON THE EAST COAST OF AFRICA.

MOZAMBIQUE.

There are no banks, and the local currency is confused, and entails loss on merchants. It is as follows:—The gold Barrinha, intrinsically only worth 5,090 Reis, but valued at 6,600 Reis; the silver Pataca, intrinsically worth 469 Reis, but valued at 600 Reis.

These coins are only strips of metal, the Barrinha being a parallelogram rudely stamped, and the Pataca of an irregular octagon shape. The English Sovereign is valued at 4,500 Reis, and is eagerly bought up with Barrinhas and Patacas at their legalized value, and exported to India.

No silver or gold is imported from Portugal, but only copper money.

At Lourenço Marques almost all the money in circulation is English.

Silver Coins.—Crusado-novo, worth 480 Reis, and pieces of 240, 120, 100, 60, and 50 Reis.

Copper Coins.—Pieces of 5, 3, and 1½ Reis.

PORTUGUESE VALUE OF ENGLISH MONEY, 4s. 5½D. FOR A MILREIS.

English.		*Portuguese.*	*English.*		*Portuguese.*
¼d.	=	4 1/16 Reis.	2s.	=	450 Reis.
½d.	=	9⅛ ,,	2s. 6d.	=	562½ ,,
1d.	=	18¾ ,,	5s.	=	1125 ,,
3d.	=	56¼ ,,	10s. = 2250 Reis, or 2¼ Milreis.		
4d.	=	75 ,,	£1 = 4½ Milreis, or 4500 Reis.		
6d.	=	112½ ,,	£5 = 22½ ,, or 22500 ,,		
1s.	=	225 ,,	£10 = 45 ,, or 45000 ,,		

THE NETHERLANDS.

Dutch value.	*Systematic name.*	*English value.*
	1 Cent	= ½d.
100 Cents	= 1 Guilder or Florin	= 1s. 8d.

By the law of 6th June, 1875, which came into operation on the 1st July, 1875, gold, which had been demonetized in 1874, was remonetized and made a legal tender, side by side with silver, both gold and silver being declared standard money and legal tender, with the relative value as between the two of 15·625 to 1.

GOLD COINS.

The Gold coins are the 10 & 5 gulden pieces which are equal respectively to 16s. 6d., and 8s. 3d. English. The value of the 10 gulden piece is £0·825934, or 20·832 francs. It weighs 6·720 grammes, and contains 6·048 grammes of pure gold. A Kilogramme of gold $\frac{9}{10}$ths fine coins into 148·8095 pieces of 10 florins.

The fineness of the gold in the coins is 900 parts pure in 1000, with a tolerance of 1·5 per mille, as well above as under that fineness. The tolerance in weight is 2 per mille as well above as under it.

The pattern of the gold standard is :—

On the obverse the King's bust, bearing for superscription the name of the King, preceded by the word King and the motto, *God be with us*; on the reverse the Arms of the Kingdom with the Royal Crown, between the marks of value 10 G, the year of issue and the superscription *Kingdom of the Netherlands*, besides the Mint marks and the marks of the master of the Mint.

SILVER COINS.

The Silver coins are the 2½ *Gulden Piece* (sometimes called Rixdollar), the *Florin* or *Guilder*, and the ½ *Florin*. These are

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* In the session of 1876 the Finance Minister laid before the Council of State, a project of law, for the introduction of a single Gold standard.

† The old 10 florin pieces or gold William weighed 6·729 grammes, and contained 6·0561 grammes of pure gold; and the metallic or intrinsic value was 1 per cent more than that of the present 10 florin piece.

of the fineness of $\frac{9}{10}\frac{4}{0}\frac{8}{0}$ths, and the Florin weighs 866·17 grains Troy. There are also in silver of a lower standard the 25, 10, and 5, *Cent Pieces*. The 5 Cent Piece is often called a stiver.

COPPER COINS.

The copper coins are the *Cent* and the ½ *Cent*, worth respectively ½d. and $\frac{1}{10}$d. sterling.

BANK NOTES.

1, 5, 10, 25, 40, 60, 100, 200, 300, 500, and 1000 Gulden.

There are also Mint Notes for 10, 50, and 100 Gulden.

TABLE OF DUTCH CURRENT COINS.

Denomination of Coin.	Standard of fineness in thousandth parts.	Weight in grammes.	English value.
			£ s. d.
Gold Coins:—			
10 Gulden	900	6·720	0 16 6
5 ,, ...	,	3·360	0 8 3
Silver Coins:—			
2½ Gulden	945	25	0 4 2
1 Guilder, or Florin	,,	10	0 1 8
½ ,, ...	,,	5	0 0 10
25 Cents	.....	....	0 0 5
10 ,, ...	.....	....	0 0 2
5 ,, ...	.....	....	0 0 1
Copper Coins:—			
Cent	.....	....	0 0 $0\frac{1}{8}$
½ Cent	.....	....	0 0 $0\frac{1}{16}$

DUTCH VALUE OF ENGLISH MONEY AT 1s. 8D. PER GUILDER.

English.		*Dutch.*	*English.*		*Dutch.*
¼d.	=	1¼ Cents	2s.	=	1 Florin 20 Cents.
½d.	=	2½ ,,	2s. 6d.	=	1½ Florins.
1d.	=	5 ,,	5s.	=	3 ,,
3d.	=	15 ,,	10s.	=	6 ,,
4d.	=	20 ,,	£1	=	12 ,,
6d.	=	30 ,,	£5	=	60 ,,
1s.	=	60 ,,	£10	=	120 ,,

The former moneys of account, and the coins were as follows:—The Guilder was divided into 20 Stivers, and each Stiver into 16 Pfennings. *Gold Coins:* Ducat, worth 5 Guilders 17 Stivers, or 9s. 9d. sterling; Half Ducat, worth 2 Guilders 18 Stivers 8 Pfennings, or 4s. 10½d. sterling; Ryder, worth 14 Gulden, or £1 3s. 4d. sterling; Half Ryder, worth 7 Gulden, or 11s. 8d. sterling; William, worth 10 Gulden, or 16s. 8d. sterling; and the Half William, worth 5 Gulden, or 8s. 4d. sterling. *Silver Coins:* Ducaton, worth 3 Gulden 3 Stivers, or 5s. 3d. sterling; Zealand Rixdollar, worth 4s. 4d. sterling; and ½, ¼, and ⅛ Rixdollars in proportion; pieces of 30, 28, 12½, 6, 2, and 1 Stiver, worth respectively, 2s. 6d., 2s. 4d., 1s. 0½d., 6d., 2d., 1d. sterling. *Copper Coins:* Doit, worth 2 Pfennings, or ⅛ of one penny sterling.

BELGIUM.

Belgium value.		*Systematic name.*		*English value.*
		1 Cent	=	$\frac{19}{200}$d.
100 Centimes	=	1 Franc	=	9½d.

GOLD COINS.

The gold coins are pieces of 100, 50, 20, 10, and 5 Francs.

SILVER COINS.

The silver coins are the 5, 2, 1, and ½ Franc pieces, and the 20 Centime piece.

BRONZE AND NICKEL COINS.

The bronze coins are pieces of 1 and 2 *Centimes*, and the nickel coins are pieces of 5, 10, and 20 *Centimes*.

No billon coins form any part of the present currency of Belgium.

Coins of 50 Centimes are not a legal tender for payment of more than $\frac{1}{10}$th of the sum due.

In bronze coins not more than 5 Francs' worth are legal at any single payment.

BANK NOTES.

The bank notes are for 1000, 500, 100, and 50 Francs. Bank notes of the National Bank are a chief medium of payment, and are convertible on demand into gold or silver at the option of the Bank.

TABLE OF THE CURRENT COINS OF BELGIUM.

Denomination of Coin.	Full Weight in Grammes.	Allowance in weight. Thousandth parts.	Standard fineness in Thousandth parts.	Allowance from Std. Thousandth parts.	Diameter. Millimetres.	English Value. £	s.	d.
GOLD COINS:								
100 Francs ...	32258·06	1	..	..	35	3	19	2
50 ,, ..	16129·3	..	..	..	28	1	19	7
20 ,, ..	6451·61	2	900	2	21	0	15	10
10 ,, ..	3225·80	..	..	..	19	0	7	11⅓
5 ,, ..	1612·90	3	..	..	17	0	3	11⅓
SILVER COINS:								
5 Francs ...	25	3	..	..	37	0	3	11⅓
2 ,, ..	10	..	..	..	27	0	1	7
1 ,, ..	5·00	5	..	..	23	0	0	9½
50 Centimes..	2·50	7	..	..	18	0	0	4¾
20 ,, ..	1·00	10	835	3	16	0	0	$1\frac{9}{10}$
NICKEL COINS:								
20 Centimes..	.....	..	..			0	0	$1\frac{9}{10}$
10 ,, ..	.....	..	..			0	0	1
5 ,, ..	.....	..	..			0	0	0½
COPPER COINS:								
2 Centimes...	.....	..	..			0	0	0¼
1 ,, ..	.....	..	..			0	0	$0\frac{1}{8}$

DENMARK.

Under the Monetary law of 23rd May, 1873, and since the 1st January, 1875, the system of currency has been as follows :—

Danish value.		*Systematic name.*		*English value.*
100 Öre*	=	1 Kronor†	=	1s. 1½d.

Gold is the standard of value and the principal medium of exchange.

GOLD COINS.

The gold coins are the *Gold Crown* of 10 Kronors, equal to 11s. 1⅛d. English, and the 20 *Kronor piece* equal to £1 2s. 2⅝d. English. The gold coins are of the standard fineness of 900 parts of pure gold in 1000.

SILVER COINS.

The silver coins are pieces of 4, 2, and 1 *Kronors*, and of 50, 40, 25, and 10 *Öre*, equal respectively to 4s. 5½d., 2s. 2⅛d. 1s. 1⅛d., 6⅜d., 5⅛d., 3⅛d., and 1⅛d. English. The 4, 2, and 1 Kronor pieces are of the standard fineness of 800 parts of pure silver to 200 parts of alloy; the 50, 40, and 25 Öre pieces, are of the standard of 600 parts of pure silver to 400 parts of alloy. The 10 Öre piece contains only 400 parts of pure silver to 600 parts of alloy.

BRONZE COINS.

The bronze coins are the 5, 2 and 1 Öre pieces, equal respectively to ⅖d., ⅔d. and ⅐d. English.

BANK NOTES.

All notes are expressed in the denominations of gold crowns,

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* The Öre is equal to about one seventh part of one penny, or a little more than half a farthing English.

† The Kronor is about *one half* of the old Danish *rigsdaler*, and *one fourth* part of the old Norwegian speciedaler, and almost exactly the same as the old Swedish riksdaler.

and amounts above 2 gold crowns or 20 kronors must be paid in gold when demanded, and the metallic reserve, as a security for the note issue, is gold.

COMPARATIVE TABLE OF DANISH MONEY.

Danish Coins.	*Old Danish value.*		*Old Swedish value.*		*Old Norwegian value.*			*English value.*		
	Rigsdaler.	Skilling.	Rigsdaler.	Öre.	Species daler.	Ort.	Skilling.	£	s.	d.
Gold Coins:										
20 Kronors..	10	0	20	0	5	0	0	1	2	$2\frac{1}{4}$
10 ,, ..	5	0	10	0	2	2	12	0	11	$1\frac{1}{8}$
Silver Coins:										
4 Kronors..	2	0	4	0	1	0	0	0	4	$5\frac{1}{4}$
2 ,, ..	1	0	2	0	0	2	12	0	2	$2\frac{3}{8}$
1 ,, ..	0	48	1	0	0	1	6	0	1	$1\frac{1}{8}$
50 öre	0	24	0	50	0	0	15	0	0	$6\frac{3}{4}$
40 ,, ...	0	19	0	40	0	0	12	0	0	$5\frac{1}{4}$
25 ,, ...	0	12	0	25	0	0	$7\frac{1}{2}$	0	0	$3\frac{1}{8}$
10 ,, ...	0	5	0	10	0	0	3	0	0	$1\frac{1}{8}$
Bronze Coins:										
5 öre	0	$2\frac{1}{2}$	0	5	0	0	$1\frac{1}{2}$	0	0	$0\frac{3}{4}$
2 ,, ...	0	1	0	2	0	0	$\frac{3}{5}$	0	0	$0\frac{3}{8}$
1 ,, ...	0	$\frac{1}{2}$	0	1	0	0	$\frac{3}{10}$	0	0	$0\frac{1}{4}$

The gold crown of 10 kronors weighs 4·4802 grammes, and contains 4·0322 grammes of pure gold, and a kilogramme of fine gold is coined into 248 gold crowns.

The par of exchange is 18 kronors for £1 sterling, or for 25 francs.

1 Franc	=	72 Ore exactly.*			8 Kronors	=	9 Reichsmarks.*	
5 Francs	=	3 Kronors	60	Ore.	9 ,,	=	12 Francs	50 Centimes.
10 ,,	=	7 ,,	20	,,	18 ,,	=	25 ,,	
20 ,,	=	14 ,,	40	,,	36 ,,	=	50 ,,	
					72 ,,	=	100 ,,	

*Imperial German money.

DANISH SYSTEM OF CURRENCY PRIOR TO 1ST JANUARY, 1875.

Prior to 1st January, 1875, the system of currency was as follows:—

96 Skilling = 1 Rigsdaler, or Daler = 2s. 2·7312d.

The unit of the monetary system was the *Rigsdaler, or Daler*, formerly called "Rigsbankdaler," and silver was the standard of value.

SILVER COINS.

The silver coins were the *Dobbeltdaler*, worth about 4s. $4\frac{7}{10}$d. sterling; the *Rigsdaler*; the $\frac{1}{2}$ *Rigsdaler*, or 48 *Skilling Piece*, worth about 1s. $1\frac{7}{10}$d. sterling; the 16 *Skilling Piece*, worth about $4\frac{47}{120}$d sterling; and the 4 *Skilling Piece*, worth $1\frac{47}{120}$d. sterling.

The silver in the Dalers and Dobbeltdalers consisted of 7 parts of pure silver and 1 part of alloy (copper). The pieces of 48 Skilling, 16 Skilling, and 4 Skilling, though silver, were of an inferior standard. Dalers and Dobbeltdalers were coined at the rate of $18\frac{1}{2}$ Dalers from the Cologne Mark weight 3608 grains Troy) of fine silver, while the pieces of 48, 16, and 4 Skilling were coined at the rate of 20 Dalers from the same weight.

GOLD COINS.

The gold coins were *Christian d'or* and *Frederick d'or*, equal to 7 Dalers 36 Skilling, and worth about 16 2d$\frac{1}{2}$d.

BRONZE COINS.

The bronze coins were the *Skilling Piece* and the $\frac{1}{2}$ *Skilling Piece*. The bronze in these coins was composed of 90 parts of copper, 5 of tin, and 5 of zinc.

DANISH VALUE OF ENGLISH MONEY, AT 18 KRONORS FOR £1 STERLING.

English.		*Danish.*		*English.*		*Danish.*	
$\frac{1}{2}$d.	=	2	Öre	2s.	= 1	Kronor 80	Öre.
$\frac{3}{4}$d.	=	4	,,	2s. 6d.	= 2	,,	
1d.	=	$7\frac{1}{2}$	,,	5s.	= 4	,,	
3d.	=	$22\frac{1}{2}$	,,	10s.	= 9	,,	
4d.	=	30	,,	£1	= 18	,,	
6d.	=	45	,,	£5	= 90	,,	
1s.	=	90	,,	£10	= 180	,,	

SWEDEN.

The system of currency and the denomination of money used in keeping accounts have been the same as those of Denmark since 1st January, 1875, and the basis of the system is a gold standard.

Swedish value.		*Systematic name.*		*English value.*
100 Öre	=	1 Riksdaler	=	1s. 1½d.

GOLD COINS.

The gold coins are the 20 and 10 *Kronor pieces*, equal respectively to £1 2s. 2¾d. and 11s. 1½d. English.

SILVER COINS.

The silver coins are the 4, the 2, and the 1 *Kronor pieces*, the 50, 40, 25, and 10, *Öre pieces*.

BRONZE COINS.

The bronze coins are pieces of 5, 2, and 1 Öre.

At the rate of £1 sterling for 18 Kronors, 5s. is equal to 4 Kronors 50 Öre; 1s. is equal to 90 Ore; 1d. is equal to 7¼ Öre.

SWEDISH VALUE OF ENGLISH MONEY, AT 18 RIKSDALERS FOR £1 STERLING.

English.		*Swedish*	*English.*			*Swedish.*
¼d.	=	2 öre	2s.	=	1 Kronor	80 öre
½d.	=	4 ,,	2s. 6d.	=	2 ,,	25 ,,
1d.	=	7¼ ,,	5s.	=	4 ,,	50 ,,
3d.	=	22½ ,,	10s.	=	9 ,,	
4d.	=	30 ,,	£1	=	18 ,,	
6d.	=	45 ,,	£5	=	90 ,,	
1s.	=	90 ,,	£10	=	180 ,,	

SWEDISH MONETARY SYSTEM PRIOR TO 1ST JANUARY, 1875.

Prior to 1st January, 1875, the monetary system, which was almost the same as at present, was as follows :—

100 Öre = 1 Riksdaler = 1s. 1·4832d.

Silver was the chief standard of value; it contained 3 parts of pure silver to 1 part of an alloy of copper.

Two Swedish pounds of "Mint Silver" (about 30 ounces British) were coined into 100 Riksdaler pieces; and the same proportion was followed in the coins that were multiples or parts of the Riksdaler.

GOLD COINS.

There were no gold coins,* but old Swedish gold Ducats were occasionally met with and were received at the Bank of Sweden at the same rate as Dutch Ducats, namely, 8 Riksdalers, 50 Öre per Ducat. The bank charged 10 Öre per Ducat more for them than it paid.

SILVER COINS.

The silver coins were the 4 *Riksdaler Piece*, worth about 4s. 5½d. sterling, the 2 *Riksdaler Piece*, worth about 2s. 2¾d. sterling, and the *Riksdaler*, worth 1s. 1½d. sterling, the 50 Öre piece, the 25 Öre piece, and the 10 Öre piece, worth respectively, about 6¾d., 3⅓d., and 1⅓d. sterling.

The piece of 4 Riksdalers was not very common, the coins in most general use were the 2 and 1 Riksdalers, and the 50 Öre, 25 Öre, and 10 Öre pieces. There were some old pieces of $\frac{1}{6}$th and $\frac{1}{5}$rd of a Riksdaler in debased silver, but they were seldom met with.

BRONZE COINS.

The bronze coins were pieces of 5, 2, 1, and ½-öre worth respectively. ⅔d., $\frac{4}{15}$d., $\frac{2}{15}$d., $\frac{1}{15}$d. sterling. The bronze coins contained 95 parts of copper to 5 of tin and 1 of zinc.

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* In 1872 a gold coin, called a Carolin and worth 10 francs, was issued from the Swedish mint.

NORWAY.

Under the law of the 4th June, 1873, the monetary system is as follows:—

Norwegian value.	*Systematic name.*	*English value.*
100 Öre or 30 Skillingen	= 1 Kronor	= 1s. 1⅛d.
4 Kronors	= 1 Specie-Daler	= 4s. 5½d.

GOLD COINS.

The gold coins are the pieces of 5 *Specie-Dalers* or 20 *Kronors*, and 2½ *Specie Dalers* or 10 *Kronors*.

SILVER COINS.

The silver coins are the 2 *Kronor piece*; the *Kronor*, or 30 Skilling piece; the 24 *Skilling piece*; the 15 *Skilling*, or 50 *Öre piece*; the 12 *Skilling*, or 40 *Öre piece*; and the 3 *Skilling*, or 10 *Öre piece*. In small silver money (*Skillemynt**) there are pieces of 4 and 2 Skillingen, worth respectively 1⅛d. and ⅜d. sterling.

BRONZE COINS.

The bronze coins are the 2 *Skilling* or 6 *Öre piece*, the 5 *Öre* or 1½ *Skilling piece*, the 1 *Skilling* or 3 *Öre piece*, and the ½ *Skilling* or 1½ *Öre piece*, the 2 *Öre piece*, and the 1 *Öre piece*.

BANK NOTES.

The bank notes are for 400 Kronors or 100 Specie-dalers; 200 Kronors or 50 Specie-Dalers; 40 Kronors or 10 Specie-Dalers; 4 Kronors or 1 Specie-Daler; 2 Kronors or ½ Specie-Daler; and 1 Kronor or ¼ Specie-Daler.

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* The term *skillemynt* denotes small copper money of 2 and 1 Skillingen, as well as small silver money of 4 and 2 Skillingen.

SYSTEM OF MONEY PRIOR TO JUNE, 1873.

Prior to June, 1873, the system was as follows:—

24 Skillingen	1 Ort or Mark*	=	10½d.
5 Ort	1 Species-Daler	=	4s. 5·9448d.

SILVER COINS.

The Silver coins were the *Species-Daler*, worth 4s. 5½d. sterling, and the *Half-Species-Daler*, worth 2s. 2⅝d. sterling, the *Ort*, *Half-Ort*, and *Quarter-Ort* respectively. In small silver money (*Skillemynt*) there were Pieces of 4, 3, and 2 Skillingen, coined at the rate of $21\frac{88}{100}$ Species-Dalers from the Münzpfund. These were worth respectively 1⅛d. and ⅝d. sterling.

COPPER COINS

The copper coins were the 2, the 1, and the ½ *Skilling Pieces* worth respectively ⅝d., ⅜d., and ⅜d. sterling.

There were no gold coins in the old currency of Norway, and for sums above 1 Ort, Paper money was the chief medium of payment.

BANK NOTES.

The Bank Notes in circulation were those of 100, 50, 10, 5, 1, ½, and ¼ Species-Daler. The Notes of 100 Species-Daler were on pink paper, those of 50 Species-Dalers were on green paper, the 10 on yellow paper, the 5 on blue paper, and the 1, ½, and ¼ on white paper.

The Norwegian Bank exchanged these notes for *specie* at a rate varying from 110 to 116 Paper-Dalers for 100 Species-Dalers.

NORWEGIAN VALUE OF ENGLISH MONEY AT 4s. 5½d. FOR 1 SPECIE-DALER.

English.		*Norwegian.*
¼d.	=	$\frac{9}{16}$ Skilling.
½d.	=	1⅛ ,,
1d.	=	2¼ Skillingen.
3d.	=	6¾ ,,
6d.	=	13½ ,,
1s.	=	27 ,,
		1 Ort 3 ,,
2s.	=	2 ,, 6 ,,

English.		*Norwegian.*
2s. 6d.	=	2 Ort, 19½ Skillingen.
5s.	=	5 ,, 15 ,,
		1 Spcs.-dlr. 15 ,,
10s.	=	2 Species-dalers 1 Ört.
		6 Skillingen.
£1	=	4½ Species-dalers.
£5	=	22½ ,,
£10	=	45 ,,

* It was called a Mark in South Norway, but in West and North Norway it was called an Ort.

SWITZERLAND.

The monetary system of Switzerland is the same as that of France, Belgium, and Italy; the unit of account is the franc; it weighs 5 grammes.

In Switzerland, as in France, Belgium, Italy, and Greece, both silver and gold are legal tender without limitation;* the "double standard," as it is called, exists; there are two legal tenders, and the debtor has the choice of paying in which he prefers. The system is as follows:—

Swiss value.		*Systematic name.*		*English value.*
100 Rappen or Centimes	=	1 Franc	=	9½d.

GOLD COINS.

Switzerland has no gold coins of her own, but the gold coins of France, Belgium, and Italy are current, namely, the pieces of 100, 50, 20, 10, and 5 francs.

SILVER COINS.

The silver coins are the 5, 2, 1, and ½ *Franc pieces;* the 5 franc piece is of the standard of 900 parts of pure silver to 100 parts of alloy, and the allowance is $\frac{3}{100}$ths; the other silver coins are of the standard of 835 parts of pure silver to 165 parts of alloy, and the allowance is $\frac{3}{100}$ths.

BILLON COINS.

The billon or mixed metal coins are the *Zwanzigrappenstück* or *Zweitbatzen* or 20 *Centime Picce*, the *Batzen* or *Zehnrappenstück* or 10 *Centime Piece*, and the *Fünfrappenstück* or *Halbbatzen* or 5 *Centime Piece*, for all practical purposes, in small transactions their value may be taken as 2d., 1d., and ½d. English respectively.

The 20 rappen piece is composed of 150 parts of pure silver to 500 of copper, 100 of nickel and 250 of zinc; the 10 rappen piece contains 100 parts of silver, 550 of copper, 100 of nickel, and 250 of zinc; and the 5 rappen piece contains 50 parts of pure silver, 600 of copper, 100 of nickel, and 250 of zinc.

BRONZE COINS.

The bronze coins are the *Zweier* or 2 *Rappen Piece*, and the *Rappe*, worth respectively $\frac{2}{135}$d. and $\frac{1}{135}$d. sterling, and weighing 2½ and 1½ grammes.

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* The delegates to the Conference, in 1876, of the Latin Union reported to the Swiss Council in favour of the complete adoption of a gold standard.

No person is obliged to receive in payment more than 20 Francs in value of the silver coins under the 1 Franc piece, more than 20 Francs worth of billon or rappen, or more than 2 Francs worth of bronze. The bronze coins are composed of 95 parts of copper, 4 of tin, and 1 of zinc.

BANK NOTES.

There are no Federal notes; the notes in circulation are Cantonal notes, and these are not accepted everywhere in Switzerland.

TABLE OF SWISS MONEY COMPARED WITH GERMAN, AUSTRIAN AND ENGLISH MONEY.

France. Belgium. Switzerland. Italy.		Germany. Old System. South Germany.		Germany. Old System. North Germany.			Austria.		England.		
F.	*C.*	*Fl.*	*Kr.*	*Th.*	*Sg.*	*Pf.*	*Fl.*	*Kr.*	£	*s.*	*d.*
	5	0	1⅛	0	0	4⅘	0	2	0	0	0⅓
	10	0	2¼	0	0	9⅖	0	4	0	0	1
	15	0	4½	0	1	2	0	6	0	0	1½
	20	0	5¾	0	1	7	0	8	0	0	2
	25	0	7	0	2	0	0	10	0	0	2½
	30	0	8½	0	2	4⅘	0	12	0	0	3
	35	0	10	0	2	9⅗	0	14	0	0	3½
	40	0	11¼	0	3	2⅖	0	16	0	0	4
	45	0	12¾	0	3	7⅗	0	18	0	0	4
	50	0	14½	0	4	0	0	20	0	0	5
1	0	0	28½	0	8	0	0	40	0	0	9½
2	0	0	57	0	16	0	0	80	0	1	7
3	0	1	25¾	0	24	0	1	20	0	2	4½
5	0	2	22¾	1	10	0	2	0	0	3	11½
7	0	3	20	1	26	0	2	80	0	5	6½
10	0	4	45	2	20	0	4	0	0	7	11
20		9	31	5	10	0	8	0	0	15	10
30		14	17	8	0	0	12	0	1	3	9
40		19	3	10	20	0	16	0	1	11	8
70		33	20	18	20	0	28	0	2	15	5
90		42	51	24	0	0	36	0	3	11	3
100		*47*	*37*	26	20	0	40	0	3	19	2
300		*142*	*51*	80	0	0	120	0	11	17	6
500		*238*	*6*	133	10	0	200	0	19	15	10

ITALY.

The monetary system for the whole of the Italian Kingdom is as follows:—

Italian value.		*Systematic Name.*		*English value.*
		1 Centime	=	$\frac{19}{200}$d.
100 Centimes	=	1 Lira	=	$9\frac{1}{2}$d.

At present (1876) a paper currency, which is at a discount of about 15 per cent., forms the chief medium of payment, and 28 lire of the paper currency may be taken as an average rate of exchange for the £1 sterling.

GOLD COINS.

The gold coins are pieces of 100, 50, 20, 10, and 5 Lire, of the same weight, fineness, and value as the gold coins of France. (See pp. 23-26.)

Both gold and silver are legal tender without limitation.

SILVER COINS.

The silver coins are pieces of 1, 2, and 5 Lire, and of 50 and 20 Centimes, of the same weight and fineness as the silver coins of France. (See pp. 23-26.)

BILLON COINS.

In Lombardy and Piedmont there were, till recently, some old pieces in Billon, namely, the *Mouta* and the *Half-Mouta*, equal respectively to 40 and 20 Centimes, and worth about 4d. and 2d. sterling, but these are now rarely, if ever, met with.

COPPER COINS.

The copper coins are pieces of 1, 3, and 5 Centimes, worth respectively $\frac{1}{10}$d., $\frac{3}{10}$d., and $\frac{1}{2}$d. sterling.

BANK NOTES.

The paper currency consists of Bank Notes for 5, 10, 20, 50, 100, 500, and 1000 francs.

OLD MONETARY SYSTEM OF SARDINIA, THE PAPAL STATES, THE TWO SICILIES, AND TUSCANY.

(1)—SARDINIA.

Formerly this island had a special currency, and accounts were stated in *Lire*, *Reals*, and *Sols*, as follows :—

5 Sols = 1 Real = 48 Centimes = 4·512d. sterling
4 Reals = 1 Lira = 192 „ = 18·048d. „

The following is a list of the old coins of the Island of Sardinia :—

	Lire.	*Lire.*	*Centimes.*	£	*s.*	*d.*
GOLD COINS :—						
Carlino =	26 =	50	0 =	2	0	0
½ „ =	13 =	25	0 =	1	0	0
Dopietta =	5⅕ =	10	0 =	0	8	0
SILVER COINS :—						
Scudo =	2⅕ =	4	80 =	0	3	9·12
½ „ =	1⅕ =	2	40 =	0	1	10·66
¼ „ =	⅖ =	1	20 =	0	0	11·26
BILLON COINS :—	*Sols.*					
Real =	5 =	0	48 =	0	0	4·502
½ „ =	2½ =	0	24 =	0	0	0·254
COPPER COINS :—						
Sol =	1 =	0	10 =	0	0	0·939
½ „ =	½ =	0	5 =	0	9	0·469
Cagliarese =	1/10 =	0	1 =	0	0	0·094

(2)—THE PAPAL STATES.

By a Papal edict in June, 1866, the older monetary system consisting of Quattrini, Bajocchi, Paoli, and Scudi, was abolished, and all the coins of those denominations were called in. The following system was introduced :—

			£	*s.*	*d.*
20 Soldi or 100 Centesimi	=	1 Lira =	0	0	9½

GOLD COINS.

							£	s.	d.	
100 Lire	=	18 Scudi	60·5 Bajocchi	=	4	0	0	English.
50 ,,	=	9 ,,	30·25 ,,	=	2	0	0	,,
20 ,,	=	3 ,,	73·1 ,,	=	0	16	0	,,
10 ,,	=	1 Scudo	86·05 ,,	=	0	8	0	,,
5 ,,	=		93·025 ,,	=	0	4	0	,,

SILVER COINS.

					£	s.	d.	
5 Lire	=	93·025 Bajocchi	=	0	4	0	English
2 ,, 50 c.	=	46·512 ,,	=	0	2	0	,,
2 ,,	=	37·210 ,,	=	0	1	7	,,
1 ,,	=	18·605 ,,	=	0	0	9½	,,
½ ,, or 10 Soldi	=	9·302 ,,	=	0	0	4⅔	,,
¼ ,, or 5 ,,	=	4·651 ,,	=	0	0	2⅓	,,

The 5 Lire Piece was $\frac{900}{1000}$ths fine; the 2½, 2, 1½, ¼ Lire Pieces are only a fraction above $\frac{835}{1000}$ths fine; and so 1,000 Lire in 5 Lire Pieces would contain a quantity of pure silver greater by 69 Lire than the same sum in the smaller or "fractionary" coins—the pieces of 2½, 2, 1, ½, and ¼ Lire.

BRONZE COINS.

				£	s.	d.	
4 Soldi or 20 Centesimi	=	3·721 Bajocchi	=	0	0	$0\frac{9}{10}$	English.
2 ,, 10 ,,	=	1·860 ,,	=	0	0	1	,,
1 Soldo 5 ,,	=	0·930 ,,	=	0	0	0½	,,
½ ,, 2½ ,,	=	0·465 ,,	=	0	0	0¼	,,
1 Centesimo	=	0·186 ,,	=	0	0	$0\frac{1}{10}$	,,

Prior to 1866 the monetary system of Rome and of the Papal Dominions was as follows:—

		1 Bajocchi	=	½d.
10 Bajocchi	=	1 Paolo	=	5d.
10 Paoli or 100 Bajocchi	=	1 Scudi or Roman Crown	=	4s. 2d.

Bankers' accounts were usually stated in Paoli.

The values just given for old Roman money are higher than the estimated *par* of exchange, which was about 46·88 Paoli in gold, or 47·53 Paoli in silver for £1 sterling.

The gold coins were the 10 *Scudi Piece*, worth about 41s. 8d.; the *Pistole* or *Gold Doppia*, worth about 13s. 6d.; the *Sequin* (22 Paoli), worth about 9s. 2d.; the *Double Sequin*, worth about 15s. 4d.; and the *Half-Sequin* (11 Paoli), worth about 4s. 7d. sterling.

The silver coins were the *Scudo*, worth about 4s. 2d.; and the *Half-Scudo;* and the pieces of ½, 1, 2, and 3, *Paoli*, worth respectively 2½d., 5d., 10d., and 1s. 3d. sterling.

In base silver, or billon, there were the pieces of 2, 4, 7½, and 15 Bajocchi. The two last were called *Single* and *Double Carlini*.

The copper coins were the *Bajoccho*, the *Half-Bajoccho*, and the *Quarter-Bajoccho*, worth respectively about ½d., ¼d., and ⅛d. sterling.

Bank notes (*Cedole*) for 5, 10, 20, 25, and 100 Scudi were used in payments above 5 Scudi.

(3.) THE TWO SICILIES.—(NAPLES.)

100 Grani = 1 Ducat = 3s. 5½d.

The Ducat was equal to about 3s. 5½d. sterling, and that is calculating the exchange at 578 Grani for £1 sterling.

Accounts were kept in Ducats and Grani only, but the Ducat was divided into 10 Carlini, each Carlino into 10 Grani, and each Grano into 10 Calli. The Ducat weighed 22·943 grammes of silver ⅘ths fine, and was, therefore, equal to 4·25 Francs.

Payments were usually made in Neapolitan dollars, each worth 12 Carlini or 120 Grani.

There were no gold coins in circulation when the Kingdom was merged in that of Italy, but the gold coins that had been issued under the law of the 20th April, 1818, were pieces of 30, 15, and 3 Ducats respectively.

The silver coins were the *Dollar*, equal to 12 Carlini or 120 Grani, and worth 56d. sterling; the *Half-Dollar*, equal to 6 Carlini or 60 Grani, and worth 28d. sterling; the ½, 1, 2, 3, and 4 *Carlini Pieces*.

The copper coins were pieces of 5, 4, 3, 2½, 2, 1½, 1, and ½ *Grani* respectively. The *Half-Grano Piece* was called a *Tornese*. The Grano had formerly been divided into 12 Calli, and among the poorer classes three Calli-pieces were in circulation when the Kingdom became a province of Italy, but these passed only for 2½ Calli.

(4.) TUSCANY.

100 Cents = 1 Florin.

By the law of 10th July, 1826, the money of account was ordered to be from 1st January, 1827, Florins and Cents, but

owing to the apathy of the people and the Government, the law was never enforced, and accounts continued to be kept, even in the Government offices, in *Lire*, *Soldi*, and *Denari*.

Tuscan value.		*Systematic name.*		*English value.*
12 Denari	=	1 Soldo	=	$\frac{5}{8}$d.
20 Soldi	=	1 Lira	=	7$\frac{3}{4}$d.

The *Lire* was equal to about 8d. sterling. The *Denaro* was an imaginary coin, and the lowest coin in circulation was the *Quattrino*, equal to 4 Denari, and worth about $\frac{3}{16}$d. sterling.

GOLD COINS.

The gold coins were the 80 *Florin Piece*, equal to 133 Lire, 6 Soldi, 8 Denari, and worth at par £4 8s. 10d. sterling; the *Raspone*, equal to 40 Lire, and worth £1 6s. 8d. sterling; and the *Gigliato*, or *Zecchino*, equal to 13 Lire, 6 Soldi, 8 Denari, and worth 8s. 10d. sterling.

SILVER COINS.

The silver coins were the *Dena*, equal to 10 Lire, and worth 6s. 8d. sterling; the *Francescone*, equal to 6 Lire, 13 Soldi, 8 Denari, and worth 4s. 5d. sterling; the *Meza-Dena*, equal to 5 Lire, and worth 3s. 4d. sterling; the *Franceschino*, equal to 3 Lire, 6 Soldi, 8 Denari, and worth 2s. 2½d. sterling; the *Testone*, or 3 *Paul Piece*, equal to 2 Lire, and worth 1s. 4d.; the *Fiorino*, equal to 1 Lira, 13 Soldi, 4 Denari, and worth 1s. 1½d. sterling; the 2 *Paul Piece*, equal to 1 Lira, 6 Soldi, 8 Denari, and worth 10$\frac{3}{8}$d. sterling; the Lira, worth 8d. sterling; the *Mezzo-Fiorino*, equal to 16 Soldi, 8 Denari, and worth 6$\frac{3}{4}$d. sterling; the *Paolo*, equal to 13 Soldi, 4 Denari, and worth 5$\frac{1}{5}$d. sterling; the *Mezzo-Lira*, equal to 10 Soldi, and worth 4d. sterling; the *Cinquino* ($\frac{1}{4}$ Florin), equal to 8 Soldi 4 Denari, and worth 3$\frac{1}{3}$d. sterling; and the *Mezzo-Paolo*, equal to 6 Soldi, 8 Denari, and worth 3$\frac{3}{4}$d. sterling. The Lira weighed 3·9443 grammes of silver ·958 fine.

COPPER AND MIXED COINS.

The copper and mixed metal coins were the *Due Crazie Piece*, equal to 3 Soldi 4 Denari, and worth 1$\frac{1}{2}$d. sterling; the *Due Soldi*, equal to 2 Soldi, and worth $\frac{3}{4}$d.; the *Crazia*, equal

to 1 Soldo, 8 Denari, and worth $\frac{1}{3}$d. sterling; the *Soldo*, worth $\frac{2}{3}$d. sterling; the *Duetto*, equal to 8 Denari, and worth $\frac{4}{15}$d. sterling; and the *Quattrino*, equal to 4 Denari, worth $\frac{2}{15}$d. sterling.*

MALTA.

(*With its Islet dependencies* Cozo, Comino, and Filfla.)

Mercantile accounts are kept either in *Scudi*, *Tari*, and *Grani*, or in *Piccioli*, *Carlini*, *Tari*, and *Scudi*, as follows:—

Maltese value.		*Systematic name.*		*English value.*
		1 Grano	=	$\frac{1}{15}$d.
20 Grani	=	1 Taro	=	1$\frac{1}{5}$d.
12 Tari	=	1 Scudo	=	1s. 8d.
		or,		
60 Piccioli	=	1 Carlino	=	$\frac{1}{4}$d.
2 Carlini	=	1 Taro	=	1$\frac{1}{2}$d.
12 Tari	=	1 Scudo	=	1s. 8d.

The Pezza, or Dollar of Exchange, contains 2$\frac{1}{2}$ Scudi, 30 Tari, 60 Carlini, 600 Grani, 3,600 Piccioli.

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* In Lucca accounts were kept in Lire, Soldi, and Denari, as follows:

Lucchese value.		*Systematic name.*		*English value.*
		1 Denaro	=	$\frac{1}{20}$d.
12 Denari	=	1 Soldo	=	$\frac{3}{5}$d.
20 Soldi	=	1 Lira	=	8d.

The following were the coins in circulation:—

	Lire.	Soldi.		Frs.	Cnts.		s.	d.
The Gold Doppia	= 22	0	=	16	50	=	13	0
The Silver Scudo	= 7	10	=	5	62	=	4	5$\frac{1}{2}$
,, ,, Mezzo-Soldo	= 3	15	=	2	81	=	2	2$\frac{3}{4}$
,, ,, Terzo ,,	= 2	10	=	1	87	=	1	5$\frac{3}{4}$
,, ,, Quinto ,,	= 1	10	=	1	12	=	0	10$\frac{1}{4}$
,, ,, 2 Lire Piece	= 2	0	=	1	59	=	1	4
,, ,, Lira	= 1	0	=	0	84$\frac{1}{2}$	=	0	8
,, ,, Mezza-Lira	= 0	10	=	0	42	=	0	4

The Two Lire Piece was very like the French Two Franc Piece, and might have been mistaken for it. Tuscan money circulates side by side with the Lucchese currency.

The Government accounts of the duties and revenue are kept in *Pounds*, *Shillings*, and *Pence* sterling, as in Great Britain; and British silver coins at their nominal value are a legal tender without limitation, and are in very general use.

The following gold, silver, and copper coins form the currency of Malta:—

GOLD COINS.

	Value in Maltese Currency.		
	Scudi.	Tari.	Grani.
Doubloon of Spain, Mexico, and South America .. .. =	38	4	16
British Sovereign .. .. .. =	12	0	0
„ Half-sovereign .. .. =	6	0	0

SILVER COINS.

Dollar of Spain, Mexico, and South America .. .. =	2	6	0
Pezza, or Dollar of Sicily* .. =	2	4	16
Half „ .. .. .. =	1	2	8
One-sixth „ .. .. .. =	0	4	16
One-twelfth „ .. .. .. =	0	2	8
British Crown (5s.) .. .. .. =	3	0	0
„ Half-crown (2s. 6d.) .. =	1	6	0
„ Shilling .. .. .. =	7	3	4
„ Sixpence .. .. .. =	0	2	12
„ Fourpence .. .. .. =	9	1	8
„ Threepence .. .. .. =	9		16

* The Sicilian Dollar passed conventionally for 30 Tari, or 4s. 2d. sterling, although by an assay, at the British Mint, it was found to contain an average of only 14 dwts. 17·45 grains of pure silver. Its intrinsic value, calculating its average weight at the rate of 5s per oz. of British standard silver, was only 3s. $11\frac{3}{4}\frac{3}{5}$d.; but by a royal proclamation it was ordained that the Sicilian Dollar should pass current and be a legal tender in the Island of Malta and its Dependencies at the rate of 4s. sterling, equal to 28 Tari, 16 Grani in Maltese Currency.

The Sicilian dollar, half-dollar, and 5 and 2½ lari pieces are still in circulation; and, if it is agreed upon beforehand, amounts in pounds, shillings, and pence, may be paid in Sicilian dollars at the rate of 4s. 2d. each; but in the absence of such agreement the dollar and its divisions are only accepted at the legal rate of 4s. per dollar; or else payment must be made in British sterling money.

BRONZE COINS.

	Value in Maltese Currency. Scudi.	Tari.	Grani.
Penny .. .. =	0	0	12
Half-penny .. .. .. =	0	0	6
Farthing .. .. .. =	0	0	3
One-third of a Farthing .. =	0	0	1 Grano

OLD MALTESE GOLD, SILVER, & COPPER MONEY.

Coins issued by the Grand Masters in the period of the Knights are now (1877) scarce, and can hardly be considered as forming any part of the circulation. They are rather curiosities than actual money. They are as follows:—GOLD COINS: 20, 10, and 5 Scudi, equal respectively to 8, 4, and 2 dollars. SILVER COINS: *Dollar* or 120 Grani or 30 Tari worth 4s.; this is inscribed with the date of issue, the value and the name of the Grand Master, thus: "Hospital et S Sap Hier. F. Emmanuel de Rohan M. M., 1781. T xxx.;" or, "F. Emmanuel Pinto M. M. H.S.S. 1757. Non surr exit Major Txxx;" *Half-dollar* or 60 Grani; *Five Tari Piece*, or 20 Grani, and *Ten Grani Piece*. COPPER COINS: *Five Grani* and 1 *Grano* Pieces; these were inscribed with the date of issue and the name of the Grand Master. They bore on one side the design of two hands clasped, and on the other the motto, *Non Aes sed Fides*, "not money but trust." La Valette, in 1556, being much in want of Money to build Valetta, issued copper coins bearing a nominal value above their metallic or intrinsic value, and these coins bore the design and motto above given.*

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* Major Porter's Knights of Malta, Vol. ii. p. 160.

TURKEY.

Turkish value.		*Systematic name.*		*English value.*
		1 Para	=	$\frac{1}{2}$d.
40 Paras	=	1 Piastre	=	$2\frac{4}{5}$d.
* 100 Piastres	=	1 Lira Turca or Medjidie *	=	18s.

The present monetary system of Turkey was introduced in the reign of Sultan Abdul Medjid; hence the name Medjidie for *Lira Turca*.

The Medjidie, or Lira Turca, and the Piastre are the only integral denominations of money used in keeping accounts, Paras being written as fractions of the Piastre.

In retail transactions the Para is divided into 3 Aspres. The Aspre is worth about $\frac{1}{8}\frac{1}{4}$d. sterling.

A *Purse* is 500 Piastres, and is equal to £4 10s. English.

GOLD COINS.

The gold coins are the *Medjidie*, or Lira Turca, worth from 17s. 9d. to 18s. sterling; the *Yarim*, or *Half-Medjidie*, worth from 8s. 10½d. to 9s., and the *Tzeirek*, or *Quarter-Medjidie*, worth from 4s. 5½d. to 4s. 6d. sterling.

The gold coins contain 11 parts pure in 12.

SILVER COINS.

The silver coins are the *Giumuh*, or *Real-Medjidie*, of 20 Piastres, worth from 3s. 6$\frac{3}{5}$d. to 3s. 7$\frac{1}{5}$d. sterling; the silver *Yarim* or *Half Real-Medjidie* of 10 Piastres, worth from 1s. 9$\frac{3}{1}\frac{3}{0}$d. to 1s. 9$\frac{3}{5}$d. sterling; the *Tzeirek* or *Quarter Real-Medjidie*, of 5 Piastres, worth from 10$\frac{1}{2}\frac{3}{0}$d. to 10$\frac{4}{5}$d. sterling; the *Tkilik* or 2 *Piastre Piece*, worth about 4$\frac{4}{5}$d. sterling; the *Piastre Piece*, worth about 2$\frac{4}{2}\frac{4}{5}$d.; and the *Half Piastre Piece*, worth about 1$\frac{4}{5}\frac{4}{0}$d.

The silver coins contain 37 parts of pure silver to 3 parts of alloy; and silver is the chief standard of value.

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* In accounts,—
Pr. denotes Piastre, and
£ denotes Medjidie, or Lira Turca

A *Five Piastre Piece* was assayed by Sir John Herschel, in 1854. It weighed ·1925 of an ounce Troy, and its fineness was ·8314. At the Mint price of 5s. 6d. per ounce for standard silver, this would give 11·4192d. sterling as the value of the Five Piastre Piece; but, compared with gold at the market price, its value to the nearest thousandth of a penny would be only 10·64d. sterling. In rough calculations the English value of the Piastre is usually taken at 2d. sterling.

COPPER COINS.

The copper coins are the *Piastre Piece*,* worth about $2\frac{4}{5}$d. sterling; the *Half Piastre Piece*, worth about $1\frac{4}{5}$d. sterling; the *Quarter Piastre Piece*, worth about $\frac{11}{20}$d. sterling; the *Five Para Piece*, worth about $\frac{3}{10}$d., and the *Para Piece*, worth about $\frac{1}{5}$ of a farthing sterling.

BANK NOTES, OR PAPER MONEY.

In July, 1876, a forced paper currency, amounting to 3 millions of Turkish lire, was issued. It consisted of notes for 5, 10, 50, and 100 Piastres (100 Piastres = 1 Turkish Lira). The notes were all numbered and stamped by the Imperial Ottoman Bank. It was made a legal tender at par at all the Imperial Treasuries in payment of taxes, but not at the Custom Houses, and Post and Telegraph Offices, where gold and silver only were taken.

It was expected that the forced paper currency would not fall much more than 7 to 9 per cent. below the value of gold: that is, it would be of the value of the Beshlic currency noticed below.

The undermentioned foreign coins are current in Turkey at the following rates:—

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* The Piastre Piece is not received by the Government, but is accepted in business at a discount of from 20 to 25 per cent.

	Nominal value. Piastres.	Exchange value. Piastres.
GOLD COINS.		
Sovereign, English	100	112 to 133
Napoleon, French	86$\frac{2}{10}$	90 to 105
Imperial, Russian*	88	93 to 105
Half Ditto	44	
New Ducat, Austrian†	53	
SILVER COINS.		
Dollar, Spanish	23	24$\frac{1}{2}$ to 31
Dollar, Austrian (Maria Theresa)	22$\frac{1}{2}$	25$\frac{1}{2}$ to 27
Ruble, Russian*	16	18 to 20
Five Franc Piece, French		25
Franc, French		4 to 5
Half-Crown, English‡		12 to 15
Florin		11$\frac{1}{4}$ to 12
Shilling		5$\frac{1}{4}$ to 6

GOLD COINS.

There are some old gold pieces occasionally met with which do not form part of the legal currency, but which are chiefly used as ornaments for women. They are the *Vanducklee* or *Ghazi*, valued at 20 Piastres of silver Medjidie money, and the *Half Vanducklee*, and the *Quarter Vanducklee*. There is also the *Old Ghazi*=25 Piastres and the *Old Half Ghazi*.

BILLON COINS.

Throughout the whole of the Turkish Empire there are in circulation silver coins of a very low standard, largely alloyed with copper and greatly worn.

These depreciated specie currencies are as follows:—

(1) *Beshlic*, estimated at 5 Piastres, Silver or Medjidie money, but worth much less in intrinsic value; and its divisions the $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$, and $\frac{1}{20}$ Beshlic pieces.

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* Not in general circulation, but chiefly used as ornaments.

† Also called *Sequin* (Zeechin) or *Magyor*. This coin being very pure is in great demand in Turkey.

‡ Not much liked.

(2) The *Altuluk* or *Altlic*, estimated at 6 Piastres, Silver Medjidie money, and its divisions the ½ and ¼ Altlic pieces.

(3) The 1, ½, and ¼, *Old Piastre* pieces of the same inferior standard as the *Altlic* and *Beshlic* money.

(4) There are besides some old coins of a still lower standard, such as the *Nashlic* valued at 3½ Piastres, and principally in use as head-ornaments worn by women.

A gold lira Medjidie nominally equal to 100 piastres, and worth about 18s. English, will, if exchanged into Medjidie currency, bring from 103 to 105 piastres; if exchanged into Beshlic, Altuluk, or other debased currency, the gold lira will pass for 107 to 109, or nine piastres; if exchanged for copper money the gold lira will bring about 140 piastres.

The rate of exchange for the different coins forming the currency varies in many parts of the empire; the average rates for the years 1864—1877 at the undermentioned places are as follows:—

	Piastres. Currency.		
ALEPPO	117	= £1 0 0	English.
BEYROUT	126	= ,, ,,	
,, ...	115	= 1 Turkish Lira	(£T.)
,, ...	100	= 20 Francs.	
,, ...	1	= 1·9d.	English.
DAMASCUS ..	125	= £1 0 0	English.
GALIPOLI	137	= ,, ,,	
,, ...	127	= 1 Turkish Lira.	
,, ...	111	= 20 Francs.	
JAFFA	128	= £1 0 0	English.
LEBANON	126	= £1 0 0	English.
,, ...	115	= 1 Turkish Lira.	
,, ...	100	= 20 Francs.	
SMYRNA	110	= £1 0 0	English.
TREBIZOND ..	111	= ,, ,,	

TURKEY.—Principality of Servia.

The moneys of account and current coins are the same as those given for Turkey, viz.,—

			English.
40 Paras	=	1 Piastre	= 1·9d.
100 Piastres	=	1 Turkish Lira	= 15s. 10d.

In 1875 Servia commenced to coin her own money.

TURKEY.—Montenego.

The money is that of Turkey.

TURKEY.—Bosnia.

The money is that of Turkey.

TURKEY.—Province of Herzegovina.

The money is that of Turkey.

TURKEY.—Province of Bulgaria.

The money is that of Turkey.

TURKEY.—Province of Albania.

The money is that of Turkey.

TURKEY.—Principality of Roumania, that is the Danubian Provinces of Wallachia and Moldavia.

The money is the same as that of Turkey.

TURKISH VALUE OF ENGLISH MONEY AT 18s. FOR A TURKISH LIRA.

English.		*Turkish.*	*English.*		*Turkish.*
¼d.	=	$4\frac{1}{17}$ Paras	2s.	=	10 Piastres $44\frac{4}{9}$ Paras
½d.	=	$9\frac{7}{27}$,,	2s. 6d.	=	13 ,, $35\frac{5}{9}$,,
1d.	=	$14\frac{14}{17}$,,	5s.	=	27 ,, $31\frac{1}{9}$,,
3d.	= 1	Piastre $15\frac{5}{9}$,,	10s.	=	55 ,, $22\frac{2}{9}$,,
4d.	= 1	,, $34\frac{2}{27}$,,	£1	=	111 ,, $4\frac{4}{9}$,,
6d.	= 2	,, $31\frac{1}{3}$,,	£5	=	555 ,, $22\frac{2}{9}$,,
1s.	= 5	,, $22\frac{2}{9}$,,	£10	=	1111 ,, $4\frac{4}{9}$,,

CANDIA (or Crete).

The money of account and the currency of Candia are the same as in Turkey.

GREECE.

Greece having acceded to the Convention of 1855, her monetary system has become identical with that of France, Italy, Belgium, and Switzerland, the *Drachma* being the same as the Franc, and the *Lepton* as the Centime.

The law establishing the new monetary system was dated 7th March, 1867, and subsequently, by a royal decree, the 13th January, 1872, was fixed as the date for the introduction of the new monetary system.

Greek value.		*Systematic name.*		*English value.*
100 Lepta	=	1 Drachma	=	9½d.

The following table shows the standard of fineness, the weight, and English value of the Greek coins :—

Denomination of Coin.	Standard of fineness in thousandth parts	Weight in grammes.	English value.	Diameter in Millimetres.
			£ s. d.	
GOLD COINS :—				
100 Drachmai ..	900	32·25806	3 19 2	35
50 ,, ..	,,	16·12903	1 19 7	28
25 ,, ..	,,	8·064515	0 19 9½	
20 ,, ..	,,	6·45161	0 15 10	21
10 ,, ..	,,	3·22580	0 7 11	19
5 ,, ..	,,	1·61290	0 3 11½	17
SILVER COINS :—				
5 Drachmai	900	25	0 3 11½	37
2 ,, ..	835	10	0 1 7	27
1 ,, ..	,,	5	0 0 9½	23
50 Lepta.....	,,	2·50	0 0 4¾	18
20 ,, ..	,,	1·00	0 0 1 9/10	16
BRONZE COINS :—				
10 Lepta ..	950 Copper	10	0 0 1	30
5 ,, ..	4 Tin	5	0 0 0½	25
2 ,, ..	10 Zinc.	2	0 0 0⅕	20
1 Lepton		1	0 0 0 1/10	15

BANK NOTES.

The Bank Notes of the National Bank of Greece are for 25, 50, 100, 500, and 1000 drachmai : they are not a legal tender; and they are payable at their full nominal value in legal

currency on presentation at the central or head office of the National Bank in Athens, but not at the branches of the Bank in the provinces; so that, except in Athens, these notes are the chief medium of payment throughout the kingdom of Greece. They form a paper currency payable only in Athens, but inconvertible in the provinces, where gold and silver are very rarely seen. Most of the metallic currency lies in the vaults of the National Bank at Athens, and forms the specie reserve required by law, namely, of one-third the total amount of notes in circulation.

In the old system of currency and accounts, established by the law of the 8th February, 1833, the monetary unit was the Drachma, weighing 4·477 grammes of silver of the standard of $\frac{9}{10}$ths of pure silver and $\frac{1}{10}$th of copper alloy. For details of this system, see Appendix.

PUBLIC DEBT OF GREECE.

The public debt, External and Internal, of Greece, amounts to 430082902 drachmas, made up as follows:—

	Drachmas.
I. External.	
1. Foreign loans of 1824 and 1825 ..	64,676,000
Interest on these loans at 5 per cent for 50 years from 1825 to the end of 1874	161,690,000
2. Loan of 60,000,000 francs, guaranteed and paid by England, Russia, & France	105,033,054
II. Internal.	
3. Indemnity to Islands Hydra, Spezzia, &c.	18,000,000
4. Old claims	7,000,000
5. Loan of 6,000,000 dr. of 1862	5,012,600
6. Exchequer Bills for 6,000,000 dr. ..	6,000,000
7. Ionian Islands Debt	3,800,000
8. Loan of 28,000,000 dr. of 1867-8 ..	25,225,280
9. Debt to King Otho's heirs	4,114,368
10. Loan of 900,000 frs. of 1870	6,608,000
11. Loan of 4.000,000 frs. of 1871 ..	4,331,600
12. Remainder of the loans of 1866 & 1868	1,657,000
13. Temporary loans	8,150,000
14. National Creditors	3,350,000
15. Remainder of the loans of 29,000,000 of 1874, after deducting the sums taken to convert loans	5,435,000
Total ..	430,082,902

THE IONIAN ISLANDS.*

(Corfu, Santa Maura, Cephalonia, Zante, Cerigo, Ithaca, and Paxo.)

The monetary system is that of Greece.

				English.
5 Obolici	=	1 Oboliccio	=	½d.
100 Oboli	=	1 Dollar	=	4s. 2d.
12 Pence	=	1 Shilling (currency)	=	1s. 0½⅔d.
20 Shillings	=	1 Pound ,,	=	£1 0s. 9⅗d.
40 Paras	=	1 Piastre	=	2⅘d.

The current coins up to the cession of the islands by Great Britain were British gold, silver, and copper coins; Spanish, Mexican, South American, Austrian, and Venetian Dollars. The Spanish Dollar was reckoned at 104 Oboli, and all other Dollars at 100 Oboli. There were also the following pieces of Ionian currency:—In silver, the 80 *Oboli Piece*, worth 8d. sterling; and, in copper, the pieces of 1 *Oboliccio* and 2½, 5, and 10 *Oboli*, worth respectively $\frac{1}{10}$d., ½d., ¼d. and 1d. sterling.

CHINA.

The denominations of money used by the Chinese in keeping accounts are *Lëang*, *Tsein*, *Fun*, and *Le*, called by foreigners *Taels*, *Mace*, *Candareens*, and *Cash*. Reckonings are never made above Taels, and the lower denominations are generally expressed as decimals of the Tael.

Chinese value.		*Systematic name.*		*English value.*
		Cash (Le)	=	$\frac{7}{100}$d.
10 Cash	=	1 Candareen (Fun)	=	$\frac{7}{10}$d.
10 Candareens	=	1 Mace (Tsien)	=	7d.
10 Mace	=	1 Tael (Leang)	=	5s. 10d.

In China silver is the chief circulating medium, and there are no national gold or silver coins. For large payments, bullion of known purity passes current by weight.

There is a legal tender currency of cash, or Sapeks, but gold and silver are usually dealt in by weight, the unit being the Tael. In buying a Tael of gold one may have to give 18 taels of silver; but in selling it he will often not obtain more than 14 Taels.

In Shanghai, Tien-Tsin, Kewkeang, and Chinkeang, accounts are kept in Taels, the medium of payment is the Tael weight

* While these islands were under British protection (1829—1864) accounts were kept by some persons in *Dollars*, of 100 *Oboli*; by others in *Pounds* of 20 *Shillings*, of 12 *Pence* Ionian currency, and by others in *Piastres*, of 40 *Paras*.

of silver, and the Mexican Dollar is now also largely used; but in Hong-Kong, Canton, Amoy, Foochow, and Swatow, Dollars and Cents are the moneys of account, and the Dollars of Mexico and the South American Republics form the chief medium of payment.

The *Tael* is a definite weight, and its subdivisions, the *Mace* and *Candareen*, are likewise weights, or rather decimal parts of the Tael. As denominations of money of account, they denote their respective weights of (reputed) pure silver. The monetary Tael is equal to 579·84 grains or 1·208 ounce Troy, and its value at that rate is about 6s. 6½d. sterling.

The Commercial Tael is heavier than the Monetary Tael, it is equal to 583⅓ Troy grains, that is assuming that 1 Chinese Cally = 1¼lbs Avoirdupois.*

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* The difference between the Monetary and Commercial Tael may be proved in this way: "Assuming the correctness of the Bombay Mint return, and the average weight of a new Dollar is 415·95 grains Troy, then $1000 should weigh 717 Taels 3 M. 5 C.,† or about Half-a-Dollar *more* than they count, which any one who has seen new Dollars weighed must know is *below* the average; whereas, supposing that the weight of the Monetary Tael were 583⅓ grains Troy, then $1000 would weigh 713 Taels 0 M. 6 C.,‡ or about $5 *shorter* than they count, and this never occurs with Mexican Dollars." If the weights in the Chinese markets are tried by the Hong Kong Standard Tael Weights it will be found that the Commercial Tael is heavier than the Monetary by $\frac{8}{10}$ths per cent.—*Rutter.*

? Grains Troy = 1 Tael Commercial
16 Taels = 1 Catty
1 Catty = ¾ lbs. Avoirdupois
1 lb. Avoirdupois = 7000 Grains Troy

4 ℔ = 1
1 = 1
1 =
3 = ℔
1 = 7000

$$\frac{7000}{12} = 583\tfrac{1}{3}$$

† ? Taels = $1000
$1 = 415·95 grains Troy
579·84 grains = 1 Tael

$$\frac{41595000}{57984} = 717\text{·}35 \text{ Taels.}$$

‡ ? Taels* = $1000
$1 = 415·95 grains Troy
583⅓ = 1 Tael

$$\frac{124785}{1756} = 713\text{·}06 \text{ Taels}$$

The Mexican Dollar is the current coin in Canton, and the South of China. In Foochow, the chief medium of payment consists of broken Spanish Dollars, while in Shanghai, Tien Tsin, Han-Kow, and the Northern Ports, it is the Tael weight of silver.

The value of the Dollar in relation to the Tael varies, according to the rate of exchange, from 700 to 760 Taels for 1000 dollars. If payment is made in dollars they are taken at the market rate, but in accounts among foreigners the customary rate is 717 Taels for 1000 dollars.*

The weight of 717 Taels is put in one scale and as many dollars as will balance it in the other. Hence a debt of 1000 dollars might happen to be paid by a number of dollars either exceeding or falling short of 1000.

In China the fineness of gold and silver is expressed by dividing their weight into 100 equal parts called *Touch*. The number of these parts denotes the proportion there is of pure metal in 100 parts by weight.

The Hong-Kong and Canton gold leaf is manufactured for commercial purposes as a medium of payment, and although guaranteed to be of 100 Touch has usually a touch of about 98 or 99 only.

The alloy used is called Pakfong, and is a mixture of zinc, nickel and copper.

The native Chinese banks have furnaces in which they fuse the precious metals (plate and foreign coin) and form them into ingots of various sizes and shapes, weighing from 3 Mace to 10 Taels. The date and place of issue, and the names of the assayer and banker are marked on each ingot.

The most common weight of the ingots is 10 Taels each; they are smooth and flat on the upper service, and rather rough and rounded on the lower; their shape bears a slight resemblance to a Chinese shoe, hence foreigners call them shoes.

The silver ingots called shoes, of 5 Mace to 10 Taels are used as money, but the Gold ingots are regarded as articles of commerce. In the maritime provinces, Spanish, Mexican, and

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* There have been, and perhaps still are, some exceptions to this rule —viz., "In settling for teas in Canton and Foochow, at so many Taels per Picul, the amount is converted into Dollars at 720, while, when paying the account, it is rendered back to Taels at 717; for Malwa opium the Chinese pay foreigners at 720, and for Bengal drugs at 718; and again the Chinese among themselves are supposed to pay at 712 to 715."—*Rutter.*

South American dollars, as coin, though not accepted by the Government, are used as a medium of payment at their nominal value; but the habit of stamping them soon destroys their weight, and then they are melted down into ingots.

Ten Taels of pure silver are reckoned equal to 1 Tael of pure gold.

Wän-Yin is the Chinese term for fine silver, but the term *Se-Sze* (fine silver), or *Sysee* is also used. Sysee silver is never altogether pure. For the purposes of trade in the different provinces of the empire, ingots are moulded of different sizes and touches. The ingots forwarded to the Imperial Treasury at Pekin in payment of taxes are of a touch of from 97 to 99, while the *Sysee* silver of commerce is generally of the fineness of 96.

When Chinese liabilities are liquidated in *Sysee* silver, 710 Taels are estimated as 1000 Dollars; thus the silver paid to the British authorities at Canton under the treaty of Nankin, in discharge of the Chinese indemnity, was received at that rate. This silver was found on assay to be of between 97 and 98 touch (*i.e.* 13 dwts. better than British Standard), and each 1lb. troy contained 13½ grs. of pure gold.

Reckoning 717 Taels as 1000 Dollars, and the Dollar as 4s. 2d. sterling, we have above 5s. 10d. as the approximate Dollar value of the Tael of Silver.

The Le, or Cash,* is the only coin issued by the Chinese Government. It is a circular piece of mixed metal (chiefly copper), about $\frac{9}{10}$ths of an inch in diameter. It has a square hole in the middle by which the pieces are strung in bundles of 100, for convenience in reckoning and carrying. It is cast, and not *minted*. It consists of 79 parts of copper, 10 of zinc, 7 of lead, and 4 of tin. The obverse bears the name of the province in which it is cast.

The reverse has the name of the reign above and below the hole with the words Tung Pau, signifying *current money*, on the right and left of the hole. Its weight should be 1 Tsien (Mace), equal to 57·98 grains, and its value the $\frac{1}{1000}$th of a Tael weight of silver; but its actual weight is from 62 to 64 grains, and its value is considerably below the legal standard, and from 1200 to 1400 Cash are commonly given for a Tael of silver. Hence it appears that the copper coin called a Cash, although it should be the same as the Cash of account, namely,

* It is called Sapeque by the French.

$\frac{1}{1000}$th part of a Tael weight of silver, is quite distinct from it and of less value. The value of the copper Cash varies also with the supply; the rate is usually from 1000 to 1400 copper Cash for a Dollar.

From a chemical assay of 9 coinages of Cash issued by the Chinese Government in each reign since the commencement of the present dynasty in A.D. 1644, it appears that the intrinsic value of the Cash varies from 4s. to 6s. 6d. per 1000. The result of that assay, as communicated by the Master of the Mint, in a dispatch dated 26th February, 1862, to the Secretary of State for the Colonies, is as follows:—"Assuming copper to be worth £100 per ton, and the alloy (zinc and lead) £20 per ton, the intrinsic value of 1000 Cash will be as follows, beginning with the earliest and ending with the latest coinage, that of the last Emperor:—

Intrinsic value of 1000 *Cash.*

	s.	d.		s.	d.	
Of 1st Emperor	6	5	of which	5	10¼	is copper.
2nd Emperor	5	4¾	,, ,,	4	9¼	,, ,,
3rd Emperor	4	3½	,, ,,	3	8½	,, ,,
4th Emperor { 1st	6	0½	,, ,,	5	9¼	,, ,,
4th Emperor { 2nd	4	3	,, ,,	3	6¾	,, ,,
5th Emperor { 1st	6	2¼	,, ,,	5	11¼	,, ,,
5th Emperor { 2nd	5	0¾	,, ,,	4	6	,, ,,
6th Emperor { 1st	5	0	,, ,,	4	2½	,, ,,
6th Emperor { 2nd	3	11½	,, ,,	3	1	,, ,,
7th Emperor	4	6¼	,, ,,	3	4½	,, ,,

Calculated from this assay, the average intrinsic value of the legal Cash issued by the Chinese Government, and at present in circulation, is about 5s. 1⅓d. sterling for 1000 cash. But the proportion of counterfeit Cash in any single payment is usually very considerable, sometimes exceeding one-third, and the average rate at which in commercial transactions Cash are converted into Dollars is 970 Cash for a Dollar, or 4s. 3½d. for 1000 Cash.

The actual value of a Cash in 1854 in Canton was $\frac{1}{16}$th of a Candareen, but its value is constantly fluctuating. A mint, presided over by a Government Director, and supplied with coinage models from Pekin, exists in each provincial city of the empire.

The Director weighs out the proper quantity of copper, receiving back from the workmen a corresponding amount of Cash (Le).

But occasionally the workmen put a little sand and iron dust into the model, so as to produce the required number of Cash, and retain a little of the copper for themselves. Hence the Cash has fallen below the Government standard. The Cash are chiefly used for small transactions in the Bazaar or to pay coolies and labourers. Large payments are made in silver or gold by weight. Government taxes are always paid in this way.

BANK NOTES.

The Bank Notes in circulation vary from 300 Cash to 1,000 Taels.

In the North of China Bank Bills form a chief medium of payment. They are printed on coarse mulberry paper, and are considerably smaller than Bank of England Notes. They are issued for sums varying from 100 to 10,000 Cash and upwards, and are generally at a considerable discount for gold and silver. Paper money is more abundant at Pekin than at Tien-Tsin. The rate of exchange between notes and Sysee silver is subject to constant variation.

At Pekin there is a copper coin called *Tang-shih*. This coin does not circulate beyond the city, its value was 10 Cash, and in weight and purity it was nearly equal to the legal standard of the Cash. It was soon depreciated in weight, however, and fell to the intrinsic value of 4 Cash. Hence, with the view of avoiding the use of these Tang-shih pieces, the paper currency was issued at Pekin. Ten Cash in coin are considered equal to Twenty Cash in Paper money.

In exchanges between Shanghai and Hong-Kong the exchange is sometimes quoted at a discount on Hong-Kong; thus, if the discount on Hong-Kong is quoted at 24 per cent, the quotation means that Shanghai gives Hong-Kong (100—24=) 76 Taels for 100 Dollars.

RATE OF INTEREST.

At Canton the usual rate of interest is from 10 to 15 per cent. per annum. When no special agreement is made the rate is 12 per cent. The rate of interest charged by pawnbrokers is 3 per cent. per month in summer and 2 per cent. in winter.

BRITISH COLONY OF HONG-KONG.

The denominations of money, in which all accounts, both public and private, are kept, are *Dollars* and *Cents*, but in statistical information furnished to Great Britain, the amounts are stated in *Pounds*, *Shillings* and *Pence* sterling.

Hong-Kong value.		*Systematic name.*		*English value.*
		1 Cent	=	½d.
100 Cents.	=	1 Dollar	=	4s. 1d.*

GOLD COINS.

There are no gold coins in circulation.

SILVER COINS.

The standard silver coin is the Mexican Dollar, the correct weight of which is 416 Troy grains, and its fineness is 900 parts of pure silver to 100 parts of alloy. Other silver dollars of equivalent value likewise pass current, as do also the Japanese Yen and the American Trade Dollar; these latter are of the same fineness as the Mexican Dollar, but are each 420 grains Troy in weight. The dollar is the only legal tender for sums over two dollars. As subsidiary token coins for local use, there are also the silver pieces of 20, 10, and 5 Cents.; these coins are of a lower standard, and are of the fineness of 800 parts of pure silver to 100 parts of alloy; they are a legal tender for any sum not exceeding two dollars.

The ordinary currency of Hong-Kong consists chiefly of "chopped" or marked Mexican dollars. The native Chinese merchants mark with their "chop," or sign all dollars that they receive. In Shanghai, and throughout the North of

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* By a proclamation issued by an order in Council, dated the 27th day of November, 1875, the rate of the dollar and of other coins representing its fractional parts was fixed at 4s. 1d. from 1st April, 1876, and at this rate the silver dollar of Mexico, and any other silver dollar of equal value, and the silver and other coins representing fractional parts of such dollars, are a legal tender in payments to the British Military and Naval forces in Hong-Kong and its dependencies, and elsewhere upon the China Station, and for the British Diplomatic, Consular and other British Imperial subjects at the various ports of China and Japan at the rate of 4s. 1d. for each dollar.

China, the Mexican dollar clean, that is not "chopped," is the only coin accepted.

BRONZE COINS.

The bronze coins are the *Cent*, worth a little over ½d. sterling; and the *Mil*, or British *Cash*, representing one-thousandth part of a Dollar, and worth $\frac{1}{10}$d. sterling. Cents and Mils are a legal tender for payment of any sum not exceeding one Dollar.

The Cent has for the obverse impression Her Britannic Majesty's effigy crowned, with the inscription, "Victoria Queen," and for the reverse impression the inscription, "One Cent, Hong-Kong," with the date of issue, and the same inscription repeated in Chinese characters.

The Mil has a hole in the centre, and has for the obverse impression "V. R.," surmounted by a crown, with "Hong-Kong, One Mil," and the date of issue, and for the reverse impression the inscription Hong-Kong, one Cash or one Mil, represented in Chinese characters.

The Mint established at Hong-Kong for the coinage of British dollars was closed in 1867, as it proved to be a financial failure; the machinery was purchased by the Japanese Government, and set up at Osaka.

THE BRITISH EMPIRE IN INDIA.

By the Act of 17th August, 1835, which came into operation on and after the 1st September, 1835, one uniform monetary system was established for the whole of British India, and came into use in accounts in 1836-7. It is as follows:—

Indian value.		*Systematic name.*		*Nominal English value.*
		1 Pie	=	¼d.
12 Pies	=	1 Anna	=	1½d.
16 Annas	=	1 Rupee	=	2s. 0d.*

* The intrinsic or metallic value of the Rupee, that is, the value of the pure silver contained in it, is calculated from the market price of bar silver. As regards Indian pay and allowances and remittances to England, the sterling rate of exchange for the Rupee is fixed annually by the British Treasury. For the year 1872-3 this official rate was 1s. 11½d.; for 1873-4 it was 1s. 10d.; for 1874-5 it was 1s. 10d.; for 1875-6 it was 1s. 10½d.; and for 1876-7 it was 1s. 9¾d.; and for 1877-8 it was 1s. 10d.

The Rupee weighs 180 Troy grains of silver of the standard fineness of 11 parts of pure silver and 1 part alloy, and, therefore, it contains 165 grains of pure silver and 15 grains of alloy. It is the chief unit of account, and the principal legal tender and medium of payment.

Silver is the universal standard of value; the currency is almost wholly silver; and taxes are received, and salaries, debts, and purchase-moneys are paid in silver. The Rupee is a legal tender in satisfaction of all engagements, provided it has not lost more than *two per cent.* in weight, and has not been clipped, filed, or defaced otherwise than by use.

A *Lac* of Rupees is 100,000 Rupees, and, reckoning the Rupee at 2s., is worth £10,000 sterling.

A *Crore* of Rupees is 100 Lacs, or 10 millions of Rupees, and is worth 1 million sterling.

SILVER COINS.

The silver coins are the *Rupee*, *Half-Rupee*, *Quarter-Rupee*, and *Double-Rupee*.

There were also the *Double-Anna* (or *one-eighth Rupee*), and single *Anna* pieces were coined in 1835, and for some time afterwards, but they have not been issued of late years.

The *Double-Rupee*, although authorised, has never been put in circulation. The *Quarter-Rupee* is a legal tender only in payment of the fraction of a Rupee.

The silver coins are all $\frac{11}{12}$ths fine; they contain 220 parts by weight of pure silver to 20 parts of alloy. English standard silver contains 222 parts of pure silver to 18 of alloy. By English assay the silver coins of India would be reported 2w., *i.e.*, 2 dwts. *worse*, or below the English standard.

GOLD COINS.

Gold coins were (in 1835) constituted tokens representing a definite sum in Silver Rupees, but not a legal tender of payment. They were the *Mohur*, or 15-Rupee piece, weighing 180 Troy grains, and being composed of gold of the standard of fineness of 11 parts by weight of pure gold to 1 part alloy, and, therefore, containing 165 grains of pure gold to 15 grains of alloy; the 10-*Rupee piece*, equal to *two-thirds of a Mohur*; the 5-*Rupee piece*, equal to *one-third of a Mohur*, and the 30-*Rupee piece*, or *Double-Mohur*.

Also, under the Law of 28th October, 1868, British and Australian Sovereigns and Half-Sovereigns of legal weight and

fineness, were constituted a legal tender as the equivalents of 10 Rupees 4 Annas, and 5 Rupees two Annas, respectively.

All the Gold Coins were of the same fineness, and of proportionate weight.

In this monetary system introduced in 1835, the ratio of gold to silver was fixed at 15 to 1; gold was under-valued as compared with silver; and, owing to the heavy fall in silver in recent years, this under-valuation has become still greater; and, consequently, very little gold is met with in circulation; the quantity would certainly not exceed one-tenth part of the metallic currency. The under-valued metal (gold) has been driven out of circulation, and people pay with the cheaper metal, silver.

BRONZE OR COPPER COINS.

Under the Act of 7th December, 1835, the Copper Coins were as follows:—

Paisa or *Pysa**	=	3 Pies, weighing 100 Troy grains.
Half-ounce, or Double Pyce	=	6 ,, ,, 200 ,, ,,
Pie	=	$\frac{1}{12}$ of an oz., & weighing 33$\frac{1}{3}$ Tr. grs.

MONETARY SYSTEM PRIOR TO 1835.

Previous to 1835 there were four kinds of Silver Rupees in circulation, viz.:—

The *Sicca Rupee* in the Lower Provinces of Bengal.

The *Furruckabad Rupee* in the Upper, or North-West Provinces; the *Arcot Rupee* at Madras; and the *Bombay Rupee* at Bombay. The *Furruckabad*, *Arcot*, and *Bombay* Rupees being precisely, or nearly of the same weight and fineness, were exchangeable the one for the other at the Government Treasury. They were all of the fineness of $\frac{11}{12}$ths. The Furruckabad Rupee weighed 179·16 grains, and contained 164·23 grains of pure silver.

The Madras and Bombay Rupees weighed 180 grains, and contained 165 grains of pure silver.

The Sicca Rupee weighed 191·9 grains, and contained 175·908 grains of pure silver.

The circumstance that the Sicca Rupee was considered to be

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* Pronounced *Pyce*.

less valuable the longer it was in circulation, gave rise to other denominations of Rupees in account. After two years' circulation the Sicca Rupee was held to be 4½ per cent. inferior, and was then called a *Sonaut*, or a coin of years; after a still longer time in circulation it was called a *Current Rupee*, and was held to be 6¼ per cent. inferior to the Sicca, or, in the proportion of 116 *Current* for 100 *Sicca* Rupees. The Sonaut and Current Rupees gradually became denominations of account, but had no representative in the current coins.

The present Rupee is equivalent to the Bombay, the Furruckabad, or the Sonaut Rupee, and to 1⅛ths of the Calcutta Sicca Rupee, and 16 of the present Rupees are equal to 15 Sicca Rupees, and 100 Siccas equal 106⅔ of the present Rupees.*

In BOMBAY accounts are sometimes kept in *Rupees*, *Quarters*, and *Raes*. Thus:—

		1 Rae	=	$\frac{8}{160}$	sterling.
25 Raes	=	1 Anna	=	1½d.	,,
100 Raes	=	1 Quarter	=	5⅝d.	,,
4 Quarters	=	1 Rupee	=	1s. 10½d.	,,

In MADRAS accounts were formerly (and in some places are now) kept in *Pagodas*, *Fanams*, and *Cash*, as follows:—

50 Cash	=	1 Fanam	=	1¼d.
45 Fanams	=	1 Star Pagoda	=	7s. 0d.

CEYLON.

On the 1st January, 1872, a new monetary system was introduced. The basis of this system is the Rupee of India, of 180 grains weight and $\frac{11}{12}$ths fineness, with the decimal subdivisions of that coin, viz.: ¼ Rupee or 8 Annas = 50 Cents. ½ Rupee or 4 Annas = 25 Cents, ⅛ Rupee or 2 Annas = 12½ Cents.

100 Cents = 1 Rupee = 2s.

The intrinsic value of the Rupee at the present (1877) price of bar silver, namely, 54d. sterling per ounce, is 1s. 10½d.

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* The Rupee struck in 1835 was, until 1862, stamped and called the "Company's Rupee." Since 1862 the stamp has been "Victoria" on one side, and "India" on the other.

	Weight in Grains.	Fineness.	Alloy.	Nominal English Value.
SILVER COINS:—				
Rupee ..	180	$\frac{11}{12}$	$\frac{1}{12}$	2s.
½ ,, ..	90	..	..	1s.
¼ ,, ..	45	..	..	6d.
10 Cents	18	..	..	2½d.
COPPER COINS:—				
5 Cents	..	..	..	1½d.
2 ,, ..	..	..	..	½d.
1 ,, ..	..	..	..	¼d.
½ ,, ..	..	..	..	⅛

From the year 1825 to 1872 accounts were kept in Pounds, Shillings, and Pence local currency; and nominally the currency consisted of British Silver Coins (for sums below 40s.); Silver or Paper Rix Dollars at the rate of 1s. 6d. per Rix Dollar; Treasury notes in terms of British Sterling; English and Australian gold Sovereigns and Half Sovereigns; and British copper coins, as well as the copper coins of the Island. But British silver coins and silver Rix-dollars disappeared from circulation in a few years; the paper Rix-dollars and Treasury notes were called in and cancelled; and English and Australian gold coins were never in circulation, and when imported were treated as merchandise, and sold generally at a premium varying from ¼ to 10 per cent. Under these circumstances the Rupee of India, at the nominal rate of 2s. with its subdivisions, became the real metallic currency of the Colony. For the 35 years prior to 1872 the Pound of local currency was 10 Rupees, and the coins that constituted the currency of Ceylon were as follows:—

	Decimal of Rupee.	Fraction of Rupee.	English value.
SILVER COINS:—			d.
Rupee ..	1	1	24
½ ,, ..	·5	½	12
¼ ,, ..	·25	¼	6
4 Penny piece	·166	$\frac{1}{6}$	4
2 Anna piece	·125	⅛	3
1 Fanam	·063	$\frac{1}{16}$ (or 1 Anna)	1½
COPPER COINS:—			
1 Penny ..	·0416	*$\frac{1}{24}$ (or $\frac{2}{3}$ Anna)	1
2 Stivers or Pie ..	·0312	$\frac{1}{32}$	¾
1 Halfpenny	·0208	†$\frac{1}{48}$ (or ⅓ Anna)	½
1 Stiver ..	·0156	‡$\frac{1}{64}$ (or ¼ Anna)	⅜
1 Farthing..	·0104	‖$\frac{1}{96}$ (or $\frac{1}{6}$ Anna)	¼
1 Challie ..	·0052	$\frac{1}{192}$	⅛

Previous to the year 1825 the public accounts were kept in Rix-dollars, Fanams, and Stivers or Pice (5 Pice = 1 Fanam; 12 Fanams = 1 Rix-dollar), the currency consisted of silver Rix-dollars, coined at the British Mint for the Colony, of copper Fanams (= 1½d.), Stivers or Pice, and Challies, and of inconvertible paper Rix-dollars, issued by the Local Government. The Rix-dollar was issued to the troops and to all civil and military officers, whose pay was specified in British sterling, at the rate of 1s. 9d. The intrinsic value of the Rix-dollar of the coinage of 1821 at 5s. per oz. (British Standard), the then market price of silver, was only 1s. 5½d.

GOA (in Portuguese India).

The chief money of account in Goa is the *Pardo*, which is divided into 4 *Good* or 5 *Bad Tangos*. It is also divided into 240 *Good* or 300 *Bad Reis*. The Pardo is equal to about 2s. 4d. sterling.

* 8 Pie; † 4 Pie; ‡ 3 Pie; ‖ 2 Pie.

MALAYA.

The only native coin is the *Mon*, or *Zeni*, or *Piti*, or Cash. It is a piece of tin with a hole in the middle. In large transactions among the natives the precious metals pass current by weight. Foreign moneys, especially Spanish and Mexican Dollars, and the *Rupee*, *Half-Rupee*, and lower coins of India, are also accepted. Those in Malacca, Singapore, and Penang form the legal currency.

BURMAH.

The chief monetary unit is a Tical or Kyat's weight of silver.

Three kinds of metal are current, namely, lead, silver, and gold, and all payments are made by the balance, the unit of weight for silver being the Tical.

Burmese value		*Systematic Name*		*English value.*
8 Small or 4 Great Rwehs	=	1 Bais (Tubes, Toques)	=	1½d.
2 Bais	=	1 Mu's	=	3d.
2 Mu's	=	1 Math	=	6d.
4 Maths	=	1 Tical (Kyat)	=	2s. 0d.

There is also for money reckonings the decimal subdivision of the Tical, as in China.

The Tical, or Kyat, is a weight equal to 351 grains troy. Its value is generally reckoned at a Rupee of India, or rather the Rupee is generally accepted as a Tical. If the silver were of the purity of English standard, the Tical would be intrinsically worth about 2s. 8d. sterling, but the quantity of alloy in the precious metals in Burmah varies very considerably.

There are no coins, and large payments are made by means of gold and silver bullion by weight. Silver is the standard of value and the principal medium of payment. There are ingots of both gold and silver varying in size from a round cake, weighing from 263 Ticals, to very small pieces.

In small payments pieces of lead are also used. The value-relation of silver to lead is usually reckoned at about 1 of pure

silver to 500 of lead. Occasionally, however, 15 Viss of lead are given for a Tical, but sometimes in cities a Tical is reckoned at 7 or 8 Viss.

SIAM.

Siamese value.		*Systematic name.*		*English value.*
200 to 450 (Cowries or Bier)	=	1 P'hai-nung	=	$\frac{1}{16}$d.
4 P'hai-nungs	=	1 Fuang	=	3$\frac{3}{4}$d.
2 Fuangs	=	1 Salung or Miam	=	7$\frac{1}{2}$d.
4 Salungs or Miam	=	1 Tical or Bat	=	2s. 6d.
4 Ticals	=	1 Famlung	=	10s. 0d.
20 Tamlungs	=	1 Catty or Chang	=	£10 0s. 0d.
100 Changs or Catties	=	1 Pecul	=	£1000 0s. 0d.

Formerly *Cowries*, and kidney-shaped pellets in silver and gold, impressed with stamp, and of various sizes, formed the only medium of payment in Siam, but now there is a regular coinage.

SILVER COIN.

The silver coin is the *Tical*, which weighs 236 grains Troy, and is worth about 2s. 6d. sterling. The device on one side is the bust of the King, in military dress and with decorations; on the other side is inscribed the seal of the kingdom, not unlike three umbrellas one over the other; it is in three divisions; in one is the triple headed elephant, in another an ordinary elephant, and in the third a speary sword, with the royal crown, sceptre, staff, shoes, and golden chain. The small coins have the same stamps.

The standard of purity of the new Tical is (I think) 900 parts of pure silver to 100 parts of alloy. Formerly the fineness was 9½ dwts. better than silver of the English standard.

Lately the Spanish Dollar, worth 4s. 2d. sterling, has become a very frequent medium of payment, especially with foreign merchants. Dollars are accepted in payment at the rate of 3 Dollars for 5 Ticals.

GOLD COINS.

Hitherto the Government has not issued any gold coins: but gold is received as payment by the *Tical* weight. 8 Siamese Ticals are equivalent to 5 Chinese Ticals.

PEWTER COINS.

The pewter coins are the *Half* and the *Quarter P'hai-nung*. These are used instead of Cowries for small change. They bear the same device as the Tical, and also an inscription in Siamese, Chinese, and English, stating their value.

At Chiengmai and other teak districts of Siam the coin in use in the markets is the Indian rupee, but smaller coins are scarce, and for small purchases salt is used to supply the place of change.

ANAM (or Cochin China.)

Accounts are commonly kept in *Quan*, *Mas*, and *Sapeks*, as follows:

Anamese value.		*Systematic name.*		*English value.*
	1	Sapek, or Dong, or Cash	=	$\frac{1}{18}$d.
60 Sapeks	= 1	Mas, or Mottien, or heap	=	3$\frac{1}{3}$d.
10 Mas	= 1	Quan, or String	=	2s. 9$\frac{1}{2}$d.

These values are calculated at the rate of 1$\frac{1}{2}$ Quan for the Spanish Dollar, worth 4s. 2d. sterling.

Until a comparatively recent date there was no native gold or silver coinage in Anam, and the only coin was the *Sapek*, or *Dong*, or *Cash*, a piece of zinc of the same shape as the Chinese Cash, and, like it, having a hole in the middle. 600 of these Sapeks form a Quan, or string, and are strung upon a piece of ratan and kept ready for use.

Sapeks form the chief medium of payment in all small transactions. For large transactions Ingots of gold and silver of various weights, and bearing the Government Stamp, are accepted in payment, although they are not considered coin. These have different names, and are as follows:—

GOLD.

The *gold Ingot, or Loof* of 10 'Taels' weight, and the *Half Ingot or Loof*, 5 Taels' weight, worth respectively about £53 and £26 10s. sterling, and the *Dinh Vang*, or *Golden Nail* of 1 Tael, and worth about £5 6s. sterling.

SILVER.

The *silver Ingot*, or *Nen-bac* of 10 Taels' weight and worth about £3 4s. sterling; the *Dinh-bac*, or *Silver Nail*, weighing 1 Tael, and worth about 6s., and the *Half-Dinh-bac*, or *Una-Dinh-bac*, and *Quarter-dinh-bac*, worth respectively 3s. and 1s. 6d. sterling. The Spanish Dollar is in general use in foreign trade.

SILVER COINS.

For the convenience of foreign merchants, a coinage of Dollars was issued in the year 1830; but these, although of the same weight as the Spanish Dollar, contain ¼ their weight of copper, and their value is estimated at about 3s. 2½d. sterling.

GOLD COINS.

For the same purpose there are in circulation *Gold Dollars, Half-Dollars, and Quarter-Dollars*, worth respectively about £2 10s., £1 5s., and 12s. 6d. sterling.

The Anamese gold and silver coins first issued were somewhat the shape of cakes of Indian ink, and had their value and the date of issue marked on them in raised letters. When new coins are issued the old ones are only taken at a considerable discount.

PERSIA.

Silver is the standard of value in Persia, and the denominations of money used in reckoning and keeping accounts are as follows:—

Persian value.	*Systematic name.*	*English value.*
50 Dinars	= 1 Shahi	= $\frac{5}{6}$d.
1000 Dinars or 20 Shahis	= 1 Keran	= 11$\frac{1}{4}$d.
10 Kerans	= 1 Toman	= 9s. 3$\frac{1}{4}$d.

GOLD COINS.

The gold coins are the *Toman*, worth about 9s. 3¼d. sterling, the 5 *Keran Piece*, worth about 4s. 7½d. sterling; and the 2 *Keran Piece*, worth about 1s. 10½d. sterling.

The Persian gold contains no alloy. A variable number of Shahis, per Toman, are charged for changing gold. The present rate is 2 Shahis per Toman.

SILVER COINS.

The silver coins are the *Keran*, worth about 11¼d. sterling; the *Half-Keran*, worth about 5⅝d. sterling; and the *Quarter-Keran* or 5 *Shahi Piece*, worth about 2$\frac{13}{16}$d. sterling.

There are no Billon coins in Persia.

COPPER COINS.

The copper coins are the *Shahi*, worth about ⅚d. sterling; the *Pool* equal to ⅔ of the *Shahi*, or 33⅓ *Dinars*, and worth about $\frac{5}{12}$d. sterling; and the *Half-Pool*, worth about $\frac{5}{24}$d. sterling, or a little less than an English farthing.

There are also the following foreign coins in circulation.

FOREIGN GOLD COINS.

Systematic name.	*Persian value.*
Mejidie, or Turkish Lira =	*21 Kerans
Russian Half-Imperial =	*17 ,, 12 Shahis.
Dutch Ducat =	*10 ,, 4 ,,

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* The rate at which these coins are given and received in payment is subject to constant variation.

FOREIGN SILVER COINS.

The old silver coins and the present silver coins of Russia, viz., the *Mairah* or 30 *Copeck Piece*, and the 25, the 20, the 15, the 10, and the 7 *Copeck Pieces*. The 30 Copeck Piece is equal to 3½ Kerans, and the others in proportion.

ARABIA.

Accounts are kept in *Piastres* and *Caveers* (or Cavears) as follows:—

Arabian value.		*Systematic name.*		*English value.*
		1 Caveer	=	$\frac{1}{80}$d.
80 Caveers	=	1 Piastre or Mocha Dollar	=	†3s. 5d.

The Spanish Dollar is the chief medium of payment. It is received as equal to 1½ *Mocha Dollars*. The native coin of Arabia is the *Commasse*, a silver coin of a low standard purity, containing only 7 parts pure out of 24. The Commasse passes current as the $\frac{1}{10}$th part of the Mocha Dollar. Its English value would, therefore, be 1¼d. sterling. It is only used in small payments.

JAPAN.

The present monetary system of Japan was introduced in 1871; it is based upon a gold standard. The Yen, weighing 1⅔ grammes or 25·72 Troy grains of gold $\frac{9}{10}$ths fine, is the fundamental unit of the system. Its divisions forming the moneys of account are as follows:—

Japanese value.		*Systematic name.*		*English value.*
10 Rin	=	1 Sen	=	½d.
100 Sen	=	1 Yen	=	4s. 2d.

† This value is reckoned from the exchange of Spanish Dollars for Piastres, at the rate of 100 Spanish Dollars for 121½ Piastres.

The following are the present current coins in Japan :—

	Standard Fineness.	Weight of Pure Metal.		Standard Weight of Piece in Grammes.	Standard weight of piece in Troy Grains.	Allowance from Standard Weight.	English value.		
		Grammes.	Troy Grains.				£	s.	d.
GOLD COINS :									
20 Yen	$\frac{9}{10}$th	30	462·97	$33\frac{1}{3}$	514·41		4	3	4
10 ,, ...	,,	15	231·48	$16\frac{2}{3}$	257·20		2	1	8
5 ,, ...	,,	7·5	115·74	$8\frac{1}{3}$	128·60		1	0	10
2 ,, ...	,,	3	46·29	$3\frac{1}{3}$	51·44		0	8	4
1 ,, ...	,,	1·5	23·15	$1\frac{2}{3}$	25·72		0	4	2
SILVER COINS :									
1 Yen	,,	24·49	378	27·215	420·		0	4	2
50 Sen.....	$\frac{5}{10}$th	10	154·4	12·5	193·		0	2	1
20 ,, ...	..	4	61·76	5·00	77·2		0	0	10
10 ,, ...	..	2	30·88	2·50	38·6		0	0	5
5 ,, ...	..	1	15·44	1·25	19·3		0	0	$2\frac{1}{2}$
BRONZE COINS									
2 Sen.....	..	..		14·26	220·		0	0	1
1 ,, ...	..	..		7·13	110·		0	0	$\frac{1}{2}$
½ ,, ...	..	..		3·56	55·		0	0	$\frac{1}{4}$
1 Rin (or $\frac{1}{10}$ Sen)	..	..		0·90	14·		0	0	$\frac{1}{20}$

Gold coins of each kind are a legal tender to any amount. The silver coins, except the 1 Yen piece, are subsidiary and are a legal tender for any sum not exceeding 10 Yen.

The 1 Yen silver piece, which is of the same weight and fineness as the Mexican dollar, is the silver coin of commerce, and was intended to be used in payment of import and export duties and taxes at the open ports, and in transactions between Japanese and foreign merchants. It may be used by mutual agreement in all payments throughout Japan. Its weight, which had been originally 416 Troy grains, was, in February, 1875, raised to 420 Troy grains. It has been constituted a

legal tender at Canton, Foochow, Singapore, and Penang, and forms, with the Mexican dollar, the currency of those places; but at the Japanese Treaty-Ports, as in other places in Japan, it is only a legal tender to a limited extent, while the Mexican dollar is a legal tender without limitation. In the interests of Japan this should be altered.

The copper coins are also subsidiary and are a legal tender for any sum not exceeding 1 Yen. There is no coin of less value than the Rin, as lower values are expressed in fractions —*mô*, *shi*, *kotsu*, *bi*, &c.

BANK NOTES.

Under the National Bank Act, of August, 1876, any number of persons, not less than five, may, having permission from the Finance Minister, form a National Banking Association.

The lowest denomination of the notes is 1 Yen = 4s. 2d. Upon the face of each note is a statement that it is secured by Government Bonds, lodged in the Treasury Department. The interest due on the bonds is paid by Government to the Banks. There is no tax at present on notes in circulation.

The Government official charged with carrying out the provisions of the Act is called the Controller of the currency. He is directly responsible to the Finance Minister. He has the power to send out Examiners of the reserve held by the banks and of their solvency. The Act fixes no limit to the amount of paper money that may be issued.

Under the Act of 1873 payment of Bank Notes was required to be in gold; but under the Act of 1876 payment may be made in inconvertible paper. Before the National Bank Act, 1876, all paper money was issued by the Government or by the Daimiyos. It is all inconvertible. The nominal value for some time past has been about from ½ to 2 per cent. below gold. In transactions between foreigners in Japan, or between Japanese and foreigners, Japanese currency is not used, but Mexican dollars.

The relation of the present to the old coins is at the rate of 1 *Yen* for 1 *Rio*, or 1,000 (one string) *Yei* cash. The 50 Sen piece is equal to *Nibu*, or 500 Yei cash. The 10 Sen piece is equal to $\frac{1}{10}$th of a *Riô*, or 100 *Yei* cash; the 1 Sen piece is equal to $\frac{1}{100}$th part of a *Riô*, or 10 *Yei* cash; the *Rin* is equal to $\frac{1}{1000}$th part of a *Riô*, or 1 *Yei* cash; and the pieces of 20 *Yen*, 10 *Yen*, 20 *Sen*, 5 *Sen*, and *Half Sen* in like proportion. 2 gold Niboos, equal 1 Yen; 4 gold Nishus, equal 1 Niboo; 4 Itsiboos, equal 1 Yen; and 4 Ischus, equal 1 Itsiboo.

Two systems of monetary accounts were in use in Japan prior to 1871. One was the Rio system, in which the denominations were *Rios*, *Itsiboos*, *Zenis*, or *Mongsengs*, and the other was the currency Nomme system, in which the denominations were the Nomme (equal to 58·24 Troy grains) of silver by weight, and its subdivisions and multiples. The latter system was based upon an uncoined currency, consisting of irregularly shaped pieces of silver of low standard, but bearing a Government stamp and passing by weight.

100 Zenis	=	1 Tempo	=	0	0	$0\frac{1}{3}$
(16 or) 17 Tempos	=	1 Itsiboo	=	0	0	4
4 Itsiboos	=	1 Rio	=	0	5	6

The current coins, under the old monetary system of Japan up to 1871, were as follows :—

	Weight in		English value.		
	Troy Grains.	Nomme.	£	s.	d.
GOLD COIN :—.					
Kobang, or Rio	51·25	·88	0	5	6
GOLD AND SILVER COINS, Mixed :—					
Niboo (or 2 Boo piece)..	93·184	1·6	0	2	9
Itsiboo-kin	46·592	0·8	0	1	$4\frac{1}{2}$
SILVER COINS :—		2·3			
Itsiboo	133·95	..	0	1	$4\frac{3}{100}$
Rio (or 4 Boo piece)	..	..			
Nishu	..	..	0	0	$8\frac{1}{2}$
Ishu.....	29·12	·5	0	0	$4\frac{1}{4}$
COPPER OR BRONZE COINS :—					
Hachi-monseng	..	..			
Tempo	317·00	..	0	0	·446
IRON COINS :—					
Zeni (or Monseng)	..	..			

The Rio, or Kobang, was a thin oval coin, soft, and easily bent, about 2 inches long, and 1 broad; it originally weighed a Tael. According to an assay made in the British Mint, in December, 1862, it contained 29·664 Troy grains of pure gold, 21·36 grains of silver, and ·192 of a grain of copper. The Kobangs in circulation prior to the year 1860 were between three and four times more valuable, both nominally and intrinsically.

The Niboo, or *Niboo-kin*, was an oblong coin composed of gold and silver mixed, it contained 20·384 Troy grains or ·35 nomme of gold, and 72·217 grains or 1·24 nomme of silver, its nominal value was 2 Itsiboos, or half a Rio.

The *Itsiboo-kin*, also composed of gold and silver mixed, was half the Niboo-kin.

The Itsiboo was an oblong rectangular silver coin; a great many Itsiboos were made of Mexican dollar silver, in the proportion of 321 Itsiboos to 100 dollars. The Itsiboo was the chief coin of the silver currency of Japan. It bore upon the upper part of the obverse a superscription, meaning "Certain, fixed," and upon the lower part, "Mint silver is always of this standard." The reverse was inscribed "*Itsiboo-kin*," ¼ of a silver Tael. There were also in Niphon the *Ita-gone*, or money slip, and the *Kodama*: these were pieces of irregular weights, but stamped to indicate their fineness.

The Nishu was a silver-gilt rectangular coin; its value was 2 Ishus, or half an Itsiboo, its weight was not material.

The Ishu was a small oblong silver coin, its nominal value was a quarter of an Itsiboo, but its real value was one-fifth of an Itsiboo.

The Zeni, or Mongseng, was a circular coin, almost wholly iron, with a square hole in the centre; its nominal value varied from time to time; sometimes 1,600 Zeni and sometimes 1,700 were reckoned to the Itsiboo.

The Hachi-monseng, or 8 Monseng piece, was a circular coin, composed of iron and copper mixed: it was the same coin as had formerly passed as a Shi-monseng, or 4 Monseng piece.

The Tempo,* more properly called Töohiyaku, or Hiyaku-mong-zeni, or 100 Mongseng piece, was the highest copper or bronze coin; it was a large oval coin with a hole in the centre;

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* So called from the *Nengo*, or reign (A.D. 1830-1843), in which it was first issued.

it was composed of 81 parts of copper, 9 of tin, and 10 of lead; it passed for 100 Zenis, 16 (or sometimes 17) Tempos went to the Itsiboo. The superscription on the obverse was "Current money of Tempo;" on the reverse was the name "Töohiyaku," with the imperial cypher below the hole.

There was also a paper currency, consisting of Bank Notes for ¼, ½, and 1 Koban. *It-Kan*, or *String*, was a denomination of money used in colloquial reckoning, but not in regular accounts; its value was about 9 Mace of silver, or about 1080 copper Mon-Zeni.

The Spanish Dollar was received at the bullion, and not at the coin, rate of value. The Dollar weighs about 71¼ Candareens, and this at the bullion rate is equal to about 160 Candareens, or ¼ of a Tael, that is an *Itsiboo*. The Itsiboo was equal to 16 *Töohiyaku;* and the Dollar, which is about treble the weight of the Itsiboo and intrinsically worth 48 Töohiyaku, was also received at 16 Töohiyaku.

STRAITS SETTLEMENTS.

SINGAPORE, PENANG, AND MALACCA.

Accounts are kept in *Dollars* and *Cents* by some, and in *Rupees*, *Annas*, and *Pies*, by others, but Government accounts rendered to the Home Authorities are made out in £ s. d. sterling.

Singapore value.		*Systematic name.*		*English value.*
		1 Cent	=	½d.
100 Cents	=	1 Dollar	=	4s. 3d.
12 Pies	=	1 Anna	=	1½d.
16 Annas	=	1 Rupee	=	1s. 1¾d.

1 Pie	=	·24 Cents
1 Anna	=	2·91 Cents
1 Rupee	=	46·5 Cents
10 Rupees	=	4 Dollars 65 Cents
100 Rupees	=	46 Dollars 50 Cents
1000 Rupees	=	465 Dollars

		Rupees.	*Annas.*	*Pies.*
1 Dollar	=	2	2	4½
1 Cent	=	0	0	4½
100 Dollars	=	214	1	5
1000 Dollars	=	2147	6	0

Silver is the standard of value, and the Mexican Dollar is the chief current coin.

SILVER COINS.

The chief silver coin is the Mexican Dollar, and there are subsidiary coins of 20, 10, and 5 Cents. The silver "Yen" of Japan, is recognized as a legal tender in the Straits Settlements.

GOLD COINS.

There is no gold coinage; formerly both gold and silver circulated by weight; and a gold coin worth about 1s. 2d. sterling was once issued, but has long since disappeared.

COPPER COINS.

In 1848 a distinct copper currency was introduced to meet the want of a legal coin to represent, and to pass in Exchange for, fractions of the Spanish Dollar. This currency consists of the following coins: the *Cent*, weighing 144 grains Troy; the *Half-Cent*, weighing 72 grains Troy; and the *Quarter-Cent*, weighing 36 grains Troy; there are also *Pies* of India in circulation.

JAVA.

The money of account of Java is the same as that of the Netherlands.

Java value.		*Systematic name.*		*English value.*
		1 Cent	=	$\frac{1}{2}$d.
100 Centen	=	1 Guilder or Florin	=	1s. 8d.

The Exchange value of Java money is less than that above given, being at the rate of 7 *Netherlands Guilders* for 8 Java Guilders. So that at that rate the value of the Guilder and Cent is respectively 1s. 5$\frac{1}{4}$d. and $\frac{7}{400}$d. sterling.

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* In Penang the Dollar is sometimes divided into 20 Copangs, and each Copang into 5 Pice.

SILVER COINS.

The silver coins are the *Florin* or *Guilder*, equal to 100 Centen, and worth nominally 1s. 8d., and in Exchange 1s. 5½d. sterling, the *Half-Guilder*, and the *Quarter-Guilder*, and the *Dime*, equal to 10 Centen, and worth nominally 2d., but in exchange 1½d. sterling.

COPPER COINS.

The only copper coin is the *Cent*, worth $\frac{1}{10}$d. sterling; the old *Doit* is no longer in circulation.

GOLD COINS.

Gold does not form any part of the legal currency of Java, but gold coins, and also silver coins of all nations are taken as articles of commerce. Some pieces of the now suppressed gold currency of Holland, such as the 10 *Guilder Pieces*, and the *Ducats*, and also *Doubloons* and English *Sovereigns*, are often met with.

BANK NOTES.

The Java Bank at Batavia issues Notes for 1000, 500, 300, 200, 100, and 50 Guilders or Florins, and a Note of 25 Florins, exchangeable only for Silver.

PHILLIPINE ISLANDS.

VIZ.:—LUZON OR LUCONIA, MINDORO, PANAY, NEGROS, MASBATE, ZEBU, BOHL, LEYTE, SAMAR, MINDANAO.

Phillipine value.		*Systematic name.*		*English value*
		1 Cent	=	$\frac{1}{10}$d.
100 Cents	=	1 Real	=	2½d.
20 Reals	=	1 Peso, or Hard Dollar	=	4s. 2d.

Formerly accounts were kept in *Pesos* of 8 Reals of 12 Granos, but these denominations gave place to the divisions of the Pesos adopted in the mother country (Spain).

The currency consists of Spanish gold and silver coins. Mexican and South American Dollars are recoined into pieces of 1, 2, and 4 Dollars. The mint of Manilla buys gold, containing not less than 880 parts pure in 1000, at the rate of 4·22 Cents per Troy grain. In Mindanao the universal legal coin is the Chinese Kansang, a large Nankin piece. 25 Kansang = 1 Gantang = about 10 Spanish hard or Silver Dollars = £2 1s. 8d. sterling.

BORNEO AND LABUAN.

The unit of account and standard of value is the Mexican dollar, or other dollar of equivalent value, as follows:—

100 Cents = 1 Dollar = 4s. 2d.

SILVER COINS.

The current silver coins are Mexican and other Dollars.

BRONZE COINS.

The current bronze or copper coins are the *Cent* and the *Half-Cent*, specially coined for the Government of the Straits Settlements.

OLD MONETARY SYSTEM.

The standard of value in Brunei and on the North-West Coast of Borneo was brass guns, by weight, the picul. From 2 to 8 guns went to the picul, and a picul of guns was worth about 30 dollars; the dollar being at the time only a nominal coin in the country. All savings were invested in brass guns.

The picul of guns was divided into 10 "Sinantons," of ten Catties each, and the small change of the State consisted of pieces of Nankin Cloth, of 6 yards in length, called "*Kayu-kain-asap*," six of which were equivalent to a dollar. Below the "Kayu-asap," as it was called for shortness, was the "Panggal-besi," or "Basi," as it is pronounced in Brunei, forty of these being equivalent to one "Asap." These were merely pieces of bar iron.

In the south of Borneo, under Dutch rule, the Real and Guilder are used in reckonings, the Real being an imaginary coin worth 2 Guilders.

In Lootoo and the territories in Borneo belonging to that country the currency consists of Doubloons, Dollars, and Pitis, 5,000 of which were equal in value to a dollar. These small zinc coins are made in China and Manilla for the Lootoo market, and are similar to the copper cash used in China, but are much smaller and thinner. In the extreme north of Borneo money is almost unknown, and accounts are kept in pieces of cloth, each piece equal to $1·50. In the mountains of the same district, reckonings are made in bundles of iron for large accounts, each bundle, so far as I can learn, being in weight about 8lbs. For small accounts they reckon in charges of gunpowder.

The mountaineers (Legai) in the N.E. of Borneo reckon in cakes of salt for small accounts and pieces of cloth, each representing $3, for large accounts.

EGYPT.

Egyptian value.		*Systematic name.*		*English value.*
		1 Fuddah, or Para	=	$\frac{1}{16}$d.
40 Paras	=	1 Piastre, or Ckirsh	=	2½d.

Egyptian money is nominally of the same value as that of Turkey.

The smallest Egyptian coin is the *Fuddah*.

There are also pieces of 5, 10, and 20 Fuddah.

The coins in circulation are Dollars of Spain, Mexico, and South America, and five franc pieces of France, Belgium, and Italy, at tariff rates fixed by the Egyptian Government.

The Dollar is tariffed at 20 piastres, and the five franc piece at 18 piastres 30 paras; 97½ piastres are equal to £1 sterling.

The coins of Turkey are a legal tender, but are seldom met with.

There is a nominal money called a *Ryal*, equal to 4½ Piastres, and worth about 10⅝d. sterling.

The *Kees*, or *Purse*, equal to 500 piastres, is worth about £5 4s. 2d. sterling.

The *Khuzneh*, or *Treasury*, equal to 1000 *Purses*, is worth about £5,208 6s. 8d. sterling.

TRIPOLI.

Tripoli value.		*Systematic name.*		*English value.*
		1 Para	=	$\frac{1}{10}$d.
40 Paras	=	1 Piastre	=	2$\frac{1}{2}$d.
20 Piastres	=	1 Mahbub	=	4s. 2d.

TUNIS.

The denominations of money used in reckoning and keeping accounts are the *Piastre*, the *Karub*, and the *Fel*, as follows:—

Tunis value.		*Systematic name.*		*English value.*
		1 Fel	=	$\frac{3}{8}\frac{5}{8}$d.
3 Fels	=	1 Karub	=	$\frac{5}{8}\frac{5}{8}$d.
16 Karubs	=	1 Piastre	=	5$\frac{5}{8}$d.

SILVER COINS.

The silver coins are the 5 *Piastre Piece*, worth 2s. 5$\frac{1}{8}$d. sterling; the *Piastre*, worth 5$\frac{5}{8}$d.; the *Quarter Piastre*, worth 11$\frac{1}{8}\frac{1}{4}$d. sterling; the 2 *Karub Piece*, worth $\frac{3}{4}\frac{5}{8}$d., and the *Karub*, worth $\frac{3}{8}\frac{5}{8}$d. The three last coins are of a very low standard, and are rather billon than silver.

COPPER COINS.

The copper coins are the *Karub* and the *Fel*.

ALGERIA.

Since the Conquest of the country by France, in 1830, the denominations of money used in reckoning and keeping accounts have been *Francs* and *Centimes* (100 Centimes = 1 Franc) as in France (see France).

The currency of France has not yet altogether superseded the old system, and the native coins are still in circulation.

Formerly accounts were kept in *Budschus*, or *Buschus*, and *Musuhns*, or *Mozounahs*. The *Budschu* is the *Pataca* or Algerine Piastre, and the *Musuhn* is sometimes called a *Tomin*.

Algerine value.	*Systematic name.*	*French value.*	*English value.*
	1 Musuhn =	·0775 Francs =	$\frac{3}{4}\frac{5}{6}$d.
24 Musuhn =	1 Budschu =	1 Franc 86 Cts. =	1s. $5\frac{1}{4}$d.

GOLD COINS.

The *Tsechine*, or *Sultanine*, is worth $4\frac{1}{4}$ to 5 Budschus; but its value in relation to gold fluctuates. Its English value is from 6s. $6\frac{3}{4}$d. to 7s. $3\frac{1}{4}$d. sterling.

SILVER COINS.

The *Buschu*, or *Budschu*, also called the *Pataca*, or Piastre of Algeria, is equal to 1 Franc 86 Centimes, and worth 1s. $5\frac{1}{4}$d. sterling. The *Double-Budschu*, equal to 3 Francs 72 Centimes, and worth 2s. 11d. sterling. The *Half-Budschu*, equal to 93 Centimes, and worth $8\frac{3}{4}$d. sterling. The *Quarter-Budschu*, equal to 46·5 Centimes, and worth $4\frac{3}{8}$d. sterling. The *Three Musuhn Piece*, equal to 23·25 Centimes, and worth $2\frac{3}{16}$d. sterling.

BILLON COINS.

The *Karubah*, or *Half Musuhn-Piece*, equal to 0·3875 of a Franc, and worth $\frac{3}{6}\frac{5}{0}$d. sterling.

COPPER COINS.

The *Aspre-chique*, equal to the 29*th part* of a Musuhn.

The Spanish Dollar is also in circulation at the rate of 70 Musuhns, or 5 Francs 35 Centimes.

MOROCCO.

Accounts are kept in *Mitkuls*, *Ounces*, *Blankeels*, and *Flues*, as follows:—

Morocco value.	*Systematic name.*	*English value.*
	1 Flue =	$\frac{3}{6}\frac{7}{0}$d.
24 Flues =	1 Blankeel =	$\frac{3}{4}\frac{7}{0}$d.
4 Blankeels =	1 Ounce =	$3\frac{7}{10}$d.
10 Ounces =	1 Mitkul =	3s. 1d.

54 Blankeels are considered equal to 1 Spanish Dollar.

GOLD COINS.

Name of the coin.	*Mitkals.*	*Ounces.*	*Blankls.*	*Flues.*	*English value.*
The Doubloon	= 24	1	0	0	= 64s.
,, Half-Doubloon	= 12	0	2	0	= 32s.
,, Quarter-Doubloon	= 6	0	1	0	= 16s.
,, Two Dollar-Piece	= 3	0	0	12	= 8s.
,, Madrid, equal to 10 Dollars	= 13	5	0	0	= 40s.

SILVER COINS.

The Dollar	= 1	3	2	0	=	4s. 2d.
,, Half-Dollar	= 0	6	3	0	=	2s. 1d.
,, Quarter-Dollar	= 0	3	1	12	=	1s. 0½d.

ABYSSINIA.

The moneys of account are as follows:—

Abyssinian value.		*Systematic name.*		*English value.*
3 Borjooks	=	1 Kibear	=	$\frac{5}{6}$d.
10 Kibears	=	1 Divanis	=	$\frac{25}{48}$d.
4 Divanis	=	1 Harf	=	$2\frac{4}{23}$d.
23 Harfs	=	1 Pataka or Dollar	=	4s. 2d.
2¼ Patakas	=	1 Sequin	=	9s. 4½d.

This country has no coinage of its own, and the current coins are chiefly Venetian Sequins, Spanish Dollars, and Imperial and Austrian Dollars. Since the British expedition to Abyssinia, in 1867-8, British Sovereigns and Indian Rupees have been in circulation. The Austrian Dollar is called a *Pataka*.

Large payments are usually made in gold ingots or nuggets, weighed by the *Wakea*, an Abyssinian weight, equal to 400 troy grains English.

Borjooks are glass beads of various colours, and are used for small payments.

Ashantee gold nuggets on analysis are found to be composed of 90·050 parts of pure gold, and 9·950 parts of silver, with a faint trace of copper and of iron (red oxide).

Small oblong pieces of salt, about 7 inches long, are also used as money. They are tied into bundles, and carried on the backs of mules into the interior; these pieces form an

important part of the commerce of Abyssinia, and of the whole of North-Eastern Africa. Their value varies with the cost of transport, and the distance from the coast; about 80 of them are valued at a wakea of gold (400 grains troy).

Estimated in gold the value of the Pataka as money of account is at the rate of 12 Patakas for one Wakea.

BRITISH POSSESSIONS ON THE WEST COAST OF AFRICA.

SIERRA-LEONE, ISLES DE LOS, BRITISH SHERBRO, THE GAMBIA, BATHURST, MacCARTHYS ISLAND, THE GOLD COAST, ELMINA, CAPE COAST CASTLE, AND CAPE ST. PAUL, SENEGAL. SLAVE COAST:—BADAGY, LAGOS; PALMA AND LECKIE.

On the West Coast of Africa accounts are kept in *Pounds*, *Shillings*, and *Pence* sterling, as in Great Britain. At the Gambia some merchants keep their accounts in pounds, shillings, and pence sterling, others in pounds, shillings, and pence currency, calculating four dollars to the pound, or five shillings to the dollar, so that the pound currency equals 16s. 8d. sterling, and the shillings and pence currency in a like proportion, and others again keep their accounts in dollars and cents.

An Order in Council of 10th May, 1843, assigned the following rates to the undermentioned coins.

Doubloon of Spain, Mexico, and South America,	64s. sterling.
The 20 Franc Piece of France	15s. 10d. ,,
Dollar of Spain, Mexico, and South America ..	4s. 2d. ,,
The 5-Franc-Piece of France	3s. 10½d. ,,

The currency consists of the above named coins, and of British gold, silver, and copper coins, at their full nominal value. But the chief medium of Exchange, both on the Gold Coast and at Gambia, has long been gold dust, valued at £4 per ounce, and as gold dust transmitted to England is worth, on an average, after deducting the usual charges for freight, insurance, and commission, about £3 12s. per ounce, the par of Exchange for bills upon England, at 3 days' sight, is generally quoted at 11⅓ premium; that is a bill upon England, for £90 would purchase 25 ounces of gold dust, equal to £100 currency. In MacCarthy's Island payments are made in ground-nuts:—111 bushels of ground-nuts = £11 2s. sterling; 62 bushels of ground-nuts = 31 dollars = £6 4s.

EAST COAST OF AFRICA,

VIZ.,

MOZAMBIQUE.

Accounts are kept in *Reis*, 1000 Reis being termed, as in Portugal, a *Milreis*. The English value of a Milreis is about 1s. 9d. sterling.

MAURITIUS.

The Government accounts are kept in *Pounds*, *Shillings*, and *Pence* sterling, as in Great Britain; but merchants and bankers, reckon and keep their accounts either in *Dollars* and *Centimes*, or in *Dollars*, *Livres*, and *Sous*, as follows.

Mauritius value.		*Systematic name.*		*English value.*
		1 Cent	=	$\frac{2}{5}$d.
100 Cents	=	1 Dollar, *current*	=	3s. 10d.
		or		
		1 Sou	=	$\frac{2}{100}$d.
20 Sous	=	1 Livre	=	$4\frac{2}{5}$d.
10 Livres	=	1 Dollar	=	3s. 10d.

The Mauritius Dollar of account was valued, in 1825, at 4s. sterling, but its present value is about 3s. 10d. sterling.

The currency of the Mauritius consists partly of the current coins of the United Kingdom of Great Britain and Ireland, but chiefly of the gold and silver coins of British India, and of the gold and silver coins of foreign States.

By a royal proclamation of 1st February, 1843, relating to the currency of the Mauritius, the following *British rates* were assigned to the coins specified.

GOLD COINS.

	Value in Mauritius. Dollars.	Cents.	*Value in British sterling.* £	s.	d.
Doubloon (of Spain, Mexico, and South America)	= 16	0	= 3	4	0
Gold Mohur (of India—coined since 1st September, 1835)	= 7	$29\frac{1}{8}$	= 1	9	2
20 Franc Piece of France ..	= 3	$95\frac{4}{8}$	= 0	15	10

SILVER COINS.

Dollar (of Spain, Mexico, and South America)	= 1	$4\frac{1}{8}$ =	0	4	2
Rupee (of India, coined since 1st September, 1835)	= 0	$45\frac{5}{6}$ =	0	1	10
Five Franc-piece (of France) or one and two Franc-pieces to the same value, viz.:— 5 Francs	= 0	$96\frac{1}{8}$ =	0	3	$10\frac{1}{2}$

These rates are disregarded in business, and the Mauritius Dollar passes as two Rupees.

British gold and silver coins, although a legal tender to any amount, are very scarce, and the currency consists chiefly of the gold and silver coins of India.

CAPE OF GOOD HOPE.

Since 1st January, 1826, all contracts for the Public Service have been made, and all accounts kept in Pounds, Shillings, and Pence sterling. Previous to the year 1826 the moneys of account were Rixdollars, each Rixdollar containing 8 Schillings, and each Schilling containing 6 Stivers, and declared to be of the value of 48 full weighted Pennies of Holland. The currency then consisted of inconvertible Paper Rixdollars, which were first issued in 1781, about 4s. per Rixdollar; but in 1825 this value had fallen to 1s. 5d. per Rixdollar. In 1826 British silver money was constituted a legal tender at the rate of 1s. 6d. sterling for a Rixdollar. In 1835 the outstanding Paper Rixdollar currency was made payable, or exchangeable, only at the Treasury, and in 1840 it was notified that no Rixdollar Notes would be accepted in payment or exchange after 31st March, 1841. And at this latter date the currency of the country became a metallic one, the old depreciated paper having been gradually withdrawn. Although the public accounts are all kept in Pounds, Shillings, and Pence sterling, the accounts of private persons are often still kept in the old denominations of Rixdollars, Schillings, and Stivers, as follows:—

		1 Stiver	=	$\frac{3}{8}$d.	sterling.
6 Stivers	=	1 Schilling	=	$2\frac{1}{4}$d.	,,
8 Schilling	=	1 Rixdollar	=	1s. 6d.	,,

The term Guilder is used to denote 6d. sterling.

The currency consists exclusively of British gold, silver, and copper coins. Spanish, Mexican, and South American Dollars and a few Indian Rupees are met with, but are not much in use as a circulating medium.

BANK NOTES.

There are Notes for £5 and upwards. At Cape Town and Graham's Town the average amount of notes in circulation is about £40,000.

ST. HELENA.

Accounts are kept in *Pounds*, *Shillings*, and *Pence* sterling. The currency of the island consists of British coins; of gold Doubloons of Spain, Mexico, and South America, valued at 64s. sterling, and of silver Dollars of Spain, Mexico, and South America, valued at 4s. 2d. sterling.

TRANSVAAL.

Gold coins of the same weight and fineness as the British sovereign, bearing on the obverse the effigy of President Burgers, and on the reverse the arms of the Republic, were coined under the superintendence of the British Mint by Messrs. Ralph Heaton and Sons, of Birmingham, in 1874-5.

From the annexation of the Country to the British Crown, British Imperial money began to be the chief medium of circulation.

DOMINION OF CANADA AND BRITISH NORTH AMERICA.

By the Act 34 Vic., cap. 5, the monetary system is as follows:

Sub-division.		*Systematic name.*		*English value.*
100 Cents	=	1 Dollar	=	£0 4s. 2d.

The more exact value of the dollar is 4s. 1·38271d., or at the rate of 486⅔ cents to the £1 sterling.

British coins pass current at the following tariff rates :—

	Dollars.	Cents.
The Sovereign, at	4	86⅔
The Half-Sovereign at	2	43⅓
The Crown ,, ...	1	20
The Half-Crown ,, ...	0	60
The Florin ,, ...	0	48
The Shilling ,, ...	0	24
The Sixpence ,, ...	0	12

SILVER COINS.

The silver coins are pieces of 1 dollar, and of 50, 25, 10, and 5 cents.

BRONZE COINS.

The bronze coin is the 1 cent. piece.

OLD MONETARY SYSTEM OF BRITISH NORTH AMERICA.

Under the old system, established by the Act 16 Vict. c. 158, the denominations were Pounds, Shillings, and Pence currency, and also Dollars, Cents, and Mils; the dollar was *one-fourth* of the pound, the cent was $\frac{1}{100}$th of a dollar, and the mil was $\frac{1}{10}$th of a cent. The pound was defined to be the equivalent of 101·301 grains of standard gold. The penny of the United Kingdom of Great Britain and Ireland was equal to two cents, and the half-penny to one cent. The Pound currency divided into 20 Shillings each of 12 Pence was equal to 16s. 8d.

THE BERMUDAS.

Accounts are kept in *Pounds*, *Shillings* and *Pence*, sterling, as in Great Britain.

Doubloons of Spain, Mexico, and South America, of not less

weight than 17 dwts., 8 grs. troy, are current at the rate of 64s. sterling, and Dollars of the same countries, at 4s. 2d. sterling.

All taxes and revenue are received either in British sterling money, or its equivalent in Foreign coins.

UNITED STATES OF NORTH AMERICA.

American value.		*Systematic name.*		*English value.*
		1 Cent	=	$\frac{1}{2}$d.*
100 Cents	=	1 Dollar	=	4s. $1\frac{5}{16}$d.

The unit of account is the *Dollar* ($); although Dollars and *Cents* are practically the only moneys of account, there are the denominations *Dimes*, or *tenths*, and *Mills*, or *thousandths* of the Dollar. The Dime has its legal representative in a silver coin worth about 4·9d. sterling. There is no coin to represent the Mill.

Since the 1st April, 1873, gold has been the single metallic standard, the gold one dollar piece of 25·8 grains troy being the sole unit of value.

Since the 1st January, 1874, the value of the British sovereign or pound sterling has been 4 *dollars*, 86 *cents*, *and* 6½ *mills*, and this valuation is the par of exchange between Great Britain and the United States. This par is derived from the value of the pure gold contained in the sovereign and the gold dollar respectively. As the standard sovereign contains 113·0016 grains troy, and the gold dollar 23·22 grains troy, it follows that the true intrinsic value of the sovereign is 4·86656† dollars (or $\frac{113·0016}{23·22}$) and in like manner the true intrinsic value of the gold dollar is 49$\frac{5}{16}$d. sterling (or $\frac{23·22}{113·0016}$ of 240d.)

In 1874, the mint charge, which by the Act of Congress of 1st April, 1873, was reduced from ½ to ⅛ of one per cent., was altogether abolished.

Prior to 1874, there had been two valuations of the pound sterling, namely, the valuation of 4 dollars 4⅘ cents fixed by Congress in 1789, and that of 4 dollars 84 cents settled by Act of Congress of 27th July, 1842.

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* These are the values of the Gold and Silver money.

The current coins of the United States, with their full weight and their French and English values, are as follows:—

	Full weight.		French value.		English value.		
GOLD COINS—	Grains.	Grammes.	F.	c.	£	s.	d.
Double Eagle = 20 Dollars	516	33·436	103	85	4	2	$2\frac{1}{2}$
Eagle =10 ,,	258	16·718	51	93	2	1	1
Half Eagle = 5 ,,	129	8·359	25	97	1	0	6
QuarterEagle = $2\frac{1}{2}$,,	$64\frac{1}{2}$	4·179	12	98	0	10	3
3 Dollar Piece	$77\frac{2}{5}$	2·054	15	59	0	12	$3\frac{1}{5}$
1 Dollar Piece	$25\frac{4}{5}$	1·6712	5	19	0	4	$1\frac{5}{16}$
SILVER COINS—							
Dollar*	$412\frac{1}{2}$		....		0	4	2
Dollar (Trade)	420	27·212	5	19	0	4	$1\frac{5}{16}$
Half Dollar, or 50 Cents..	192·904	12·5	2	50	0	2	$0\frac{1}{2}$
Quarter Dollar, or 25 ,, ..	96·45	6·25	1	25	0	1	$0\frac{1}{4}$
Dime, or 10 Cents	38·58	2·5	0	50	0	0	5
Half Dime = 5 Cents ..	19·29	1·25	0	25	0	0	$2\frac{1}{2}$
3 Cents	$12\frac{3}{5}$		0	15	0	0	$1\frac{1}{2}$
NICKEL COINS—							
5 Cents	....	....	0	15	0	0	$2\frac{1}{2}$
3 Cents	....	....	0	15	0	0	$1\frac{1}{2}$
COPPER COINS—							
Cent (88 parts copper & 12 nickel)	....	$\frac{88}{100}$ths.	0	5	0	0	$0\frac{1}{2}$
Half Cent	....	....	0	$2\frac{1}{2}$	0	0	$0\frac{1}{4}$

Estimated in United States Cents the Half-eagle equals 500 cents, the British Sovereign 486 cents, and the German 20 Mark Piece 476 cents.

The Coinage Act of 1873 altered the weight of the current silver coins of United States. It reduced the half dollar and its lower denominations to 25 grammes exactly, per dollar's worth, from 1st April, 1873, as against 24·882 grammes from 1853 to 1873.

Two silver half-dollar coins are equal to a silver 5 franc piece of France, Belgium, or Switzerland, a five lire silver

* Under Senate's Bill of 18 Dec., 1876.

piece of Italy, or a five peseta silver piece of Spain; and one half-dollar is exactly equal to a silver florin of Austria.

The silver coins, except the trade dollar, are a legal tender for sums not exceeding 5 dollars in one payment; they are token money. The trade dollar serves as a means of exporting silver of certified weight and fineness to China, Japan, and other Eastern countries; but in those countries it is only an article of commerce.

BANK NOTES.

100, 50, 20, 10, 5, 1 dollars. The "fractional currency notes," of 50, 25, and 10 cents. were withdrawn from circulation in 1876, under the Act of April of that year.

An Act passed in 1873, to "establish the Custom-house Valuation of the Sovereign of Great Britain, and to fix the par of exchange," enacted "That the value of foreign coin, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," that is to say, that the value of imported coins shall be estimated to be that of the amount of pure silver actually contained in them, reckoning each coin to be of full standard weight. Under this Act the value of the French and Belgian franc is 19 cents, 3 mills.

Specie payments were suspended in Dec., 1861. Green-backs were, in February, 1862, issued (the first issue) to the amount of 150,000,000 dollars. Green-backs were made legal tender for all payments except for duty on imports and interest on the public debt. Up to June, 1862, gold did not rise above 109½. In July, 1862, a second issue of 150,000,000 dollars of Green-backs was made. After this the depreciation of Green-backs was rapid. In December, 1862, gold ranged from 130 to 134. In March, 1863, a third issue of Green-backs was made, and so the depreciation continued until, in July, 1864, gold reached 285; that is to say, it took 285 cents in paper to purchase a gold dollar, or in other words, Green-backs were worth little more than one-third their nominal value.

The depreciation fell severely upon those having fixed incomes, and on all persons in the Military, Naval, and Civil Service, and owners of houses, and lands let on lease.

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* The Trade Dollar is exclusively for foreign use, as a convenience in trade with China and Japan.

The violent fluctuations in the value of Green-backs was an evil. In July, 1864, the highest price was 285, and the lowest 222, a difference of over 28 per cent. between the extreme prices. In January, 1864, the lowest price was 152½, a difference of 132½ in 7 months—that is to say, the highest quotation was nearly double the lowest; for example, if one exchanged green-backs for gold, in Jan., 1864, when the value was 152½, and in July, 1864, for 100, when the value was 285, he would have got for £100 in green-backs £65 11s. 9d. in January, and only £35 1s. 9d. in July; hence, because of these violent and rapid fluctuations no one could foresee with any reasonable certainty what the worth of money might be from day to day. After July, 1864, green-backs began to recover. In December, 1864, the price of gold varied from 211 to 244. In April, 1865, when the war was over, the price of gold ranged from 146 to 160; during the remainder of that year, the violent fluctuations ceased; in December, 1864, the price ranged from 144½ to 146¾. In April, 1866, an Act was passed to contract the amount of green-backs. On the accession of President Grant the value of green-backs began to rise. In December, 1869, the price of gold ranged from 119½ to 1?4, and in December, 1870, it ranged from 110½ to 111½. During 1871-2 the price of green-backs was lower, but in the autumn of 1873 the price suddenly rose. In Nov., 1873, gold was at 106½, and during the three years following it was about 108-9. In January, 1875, the Resumption Act was passed, fixing 1st January, 1879, for the resumption of specie payments; the Act produced little effect for a time on the price of gold, but, in 1876, as all parties agreed in the policy of resumption of specie payments, the value of green-backs rose steadily, and in March, 1877, the price of gold was from 104¼ to 104⅞, thus the value of green-backs rose gradually to par.

MEXICO.

Accounts are kept in *Dollars* and *Cents*, as follows:—

Mexican value		*Systematic name.*		*English value*
		1 Cent	=	½d.
100 Cents	=	1 Dollar	=	4s. 2d.

	Full weight in Grains.	Fineness.	Weight of Pure Metal.	Grs. Alloy.	English Value. £ s. d.
GOLD COINS:—*					
Doubloon (16 dolls.)	$417\frac{1}{17}$	$\frac{21}{24}$ths	$364\frac{63}{65}$	$52\frac{2}{65}$	3 6 8
½	$208\frac{9}{17}$	,,	$182\frac{63}{130}$	$26\frac{2}{130}$	1 13 4
¼	$104\frac{9}{34}$	,,	$91\frac{63}{272}$	$13\frac{2}{272}$	0 16 8
SILVER COINS:—*					
Dollar	$417\frac{1}{17}$	$\frac{10\frac{2}{4}}{12}$ ths	392	25	0 4 2
Half-dollar (50 cnts.)	$208\frac{9}{17}$	,,	196	$12\frac{1}{2}$	0 2 1
Qtr.-dollar (25 cents)	$104\frac{9}{34}$	,,	98	$6\frac{1}{4}$	0 1 $0\frac{1}{2}$
Peseta (20 cents)	$83\frac{7}{17}$	,,	62	21	0 0 10
Real ($12\frac{1}{2}$ cents)	$52\frac{2}{65}$	$\frac{9\frac{2}{4}}{12}$ ths	39	13	0 0 $6\frac{1}{4}$
COPPER COINS:—					
Quartillo ($\frac{1}{32}$ dollar)					0 0 $1\frac{2}{16}$
Octavo (or Claco)	$(\frac{1}{64}\frac{8}{9})$				0 0 $0\frac{25}{32}$

Dollars and half-dollars contain $10\frac{2}{4}$ parts, and pesetas and reals $9\frac{2}{4}$ parts pure out of 12, but pesetas and reals of Bolivia contain only 8 parts pure out of 12.

Money of account may have reference either to these small silver coins of lower standard, or to the Hard Dollars. If reckoned in the small base coins its value is less than it would be if reckoned in Hard Dollars.

CENTRAL AMERICA.

GUATEMALA.

The denominations of money in which accounts are kept, are as follows:—

100 Cents = 1 Dollar = £0 4s. 0d. English.

* The gold coins at the rate of $8\frac{1}{2}$ doubloons, and the silver coins at the rate of $8\frac{1}{2}$ dollars to the Castile mark ($=3550\frac{1}{2}$ troy grains.

SAN SALVADOR.

The denominations of money are as follows:—

100 Centavos = 1 Dollar = £0 4s. 0d. English.

NICARAGUA.

The denominations of money are as follows:—

100 Cents = 1 Dollar = £0 4s. 0d. English.

HONDURAS.

The denominations of money are as follows:—

100 Cents = 1 Dollar = £0 4s. 0d. English.

COSTA RICA.

The denominations of money are as follows:—

100 Centavas = 1 Dollar — £0 4s. 0d. English.

WEST INDIES (British).*

In most of the West India Islands accounts are kept in Pounds, Shillings, and Pence sterling, as in Great Britain, but sometimes they are kept in Dollars and Cents, as follows:—
100 Cents = 1 Dollar = 4s. 2d. English.

GOLD COINS.

English *Sovereign* and *Half-Sovereign;* Spanish, Mexican, and Columbian Doubloons, current at 64s. sterling each (or 15·36 Dollars); United States Eagle, current at 41s. 8d. sterling; the Half-Eagle, at 20s. 10d. sterling; Quarter-Eagle, at 10s. 5d. sterling; Two Dollar Piece, at 8s. 4d.; Dollar, at 4s. 2d. sterling; and Quarter Dollar, at 1s. 0½d. sterling.

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* The British West Indies include Jamaica; the Windward Islands, viz., Trinidad, Tobago, Grenada, St. Vincent, Barbadoes, and St. Lucia; the Leward Islands, viz., Dominica, Montserrat, St. Kitts, Antigua, Nevis, Anguilla, Barbuda, and the Virgin Islands; the Bahamas; the Bermudas; Demerara, Berbice and Essiquibo, and Honduras.

SILVER COINS.

Crown (5s.), Half-Crown, Florin, Shilling, Sixpence, Fourpence, Threepence, Twopence. Quattie (1½d.), Dollar (4s. 2d.), Half-Dollar (2s. 1d.), Quarter-Dollar (1s. 0½d.)

The Doubloon is a legal tender, at the value of 64s., and the Dollar at the rate of 4s. 2d. sterling, and gold and silver coins of Great Britain are a legal tender to any amount at the rates current in Great Britain.

BRONZE COINS.

The pence and half-pence of Great Britain are a legal tender.

NICKEL COINS.

Pence and half-pence coined at the British Mint and of the same value as the bronze pence and half-pence of Great Britain.

Previous to the year 1838 the currency of the West Indies was on a very unsatisfactory footing. Accounts were kept either in Pounds, Shillings, and Pence, currency, or in Dollars and Cents, and to these denominations arbitrary values were assigned which varied in the different islands. From the overvaluation of the gold coins in circulation relatively to those of silver, the Spanish Dollar had almost wholly disappeared from circulation; mutilated coins or parts of coins had been substituted, and there was even a difficulty in retaining these latter in sufficient quantity to meet the wants of domestic interchange. The want of small silver coins for the ordinary transactions of the market led to the practice of cutting Silver Dollars into "Bitts," nominal values in the currency of the islands being assigned to those Bitts. The number of Bitts reckoned equal to a Dollar, varied at different places; thus at Dominica, Nevis, Montserrat, St. Kitts, Antigua, and Demerara, 12 Bitts, at Barbadoes 10 Bitts, and at Trinidad 9 Bitts, were reckoned equal to a Dollar.

A Royal Proclamation, dated 14th September, 1838, fixed the British sterling value of the Doubloon and Dollar respectively at 64s. and 4s. 2s. sterling. Immediately after that Proclamation the Governors of the several islands determined the

colonial currency rates at which the Doubloon, the Dollar, and the British Shilling were to be a legal tender. These rates were as follows :—

	Doubloon.			*Dollar.*		*British Shilling.*	
	£	s.	d.	s.	d.	s.	d.
Jamaica	5	6	8	6	11½	1	8
Barbadoes	5	0	0	6	6	1	6½
Trindad, Grenada, St. Vincent, Dominic	8	0	0	10	5	2	6
Montserrat, St. Kitts, Antigua, Nevis	7	4	0	9	4½	2	3

WEST INDIES (Spanish).

CUBA, PORTO-RICO, AND THE ISLETS OF MARGARITA, TESTIGOS, TORTUGA, BLANQUILLA, ORCHILLA, ROCA, AND AVES.

The denominations of money in which accounts are kept are dollars and cents, as follows :—

100 Cents = 1 Dollar = £0 4s. 0d.

The dollar is equal to 5 pesetas (see Spain).

The current coins are gold *Doubloons* and silver *Dollars* and their subdivisions.

WEST INDIES. (Dutch).

VIZ.,

BONAIRE, CURACOA ORUBA, ST. MARTIN, SABA, AND ST. EUSTATIUS.

The money, weights, and measures are the same as those of the Netherlands.

WEST INDIES. (Danish).

VIZ.,

ST. THOMAS, ST. CROIX, ST. JOHN.

Accounts are kept in dollars and cents as follows :—

100 Cents = 1 Dollar = 4s. English.

WEST INDIES. (Swedish.)

VIZ.,

ST. BARTHOLOMEW.

The money, weights, and measures are the same as those of Denmark.

REPUBLIC OF HAYTI (or Hispaniola, or St. Domingo.)

Accounts are kept in current *Dollars* (called *Gourdes*) and *Cents*.

Haytian value.		*Systematic Name.*		*English value.*
		1 Cent	=	$\frac{1}{8}\frac{1}{2}$d.
100 Cents	=	1 Gourde, or Dollar	=	$3\frac{1}{8}$d.

The native currency consists of Depreciated Paper Gourdes, and of copper coins, namely of 5 and 10 centime pieces made in France.

The value of the Paper Gourde is very fluctuating. In 1872 the rate of exchange of Paper Dollars, or Gourdes, for gold or silver coins, was 390 dollars paper for 1 dollar gold or silver.

The chief medium of payment in all small transactions is copper money, consisting of 1 and 2 *Cent Pieces*.

Some old silver pieces of 25 and 50 Cents (called Gourdins) and of $2\frac{1}{2}$ cents are still in circulation. Their value is four times that of the paper money, the 25 Cent Piece being equal to 1 Paper Gourde.

In large commercial dealings with foreign countries the chief medium of payment consists of Spanish, Mexican, and South American gold Doubloons and silver Dollars, and of silver Dollars of the United States, and their subdivisions. The Doubloon = 64s. and the Dollar = 4s. 2d. sterling.

COLOMBIA (United States of).

Under the law of the 9th of June, 1871, the monetary system is as follows: —

Colombian value.	*Systematic name.*		*English value.*
	1 Centavo	=	$\frac{1}{2}$d.
100 Centavos	1 Peso, or Dollar	=	4s. 0d.

GOLD COINS.

The gold coins are the *Double Condor* of 20 Pesos, and the *Condor* of 10 Pesos, equal respectively to £4 and £2 English, or 100 Francs and 50 Francs French.

SILVER COINS.

The silver coins are the *peso*, and the 2, 1, and ½ *decimo pieces*, equal respectively to 4s. 9⅗d., 4⅘d., and 2⅖d. English or 5 francs, 1 franc, and 50 and 25 centimes French.

BRONZE COINS.

The Centavo and the Half-Centavo, equal respectively to ½d. and ¼d. sterling, and many bronze coins of equal value are accepted, such as the French 5 Centime Piece, the English Half-penny, and the American Cent.

Table of Colombian Coins and their French and English value.

Denomination of Coin.	Standard Fineness in thousandth parts.	Weight in Grams	French Value.		English Value.		
			F..	C.	£	s.	d.
GOLD COINS:—							
Double Condor (20 pesos)	900	32·258	100	0	4	0	0
Condor (10 pesos)	900	16·129	50	0	2	0	0
SILVER COINS:—							
1 Peso	900	25·	5	0	0	4	0
2 Decimos	835	5	1	0	0	0	9⅗
1 ,, ...	,,	2·500	0	50	0	0	4⅘
½ ,, ...	,,	1·250	0	25	0	0	2⅖
BRONZE COINS:—							
1 Centavo	..	..	0	5	0	0	½
½ ,, ...	..	..	0	2½	0	0	¼

GUIANA. (British.)

Guiana.		*Systematic name.*		*English value.*
		1 Cent	=	½d.
100	=	1 Dollar	=	4s. 2d.

GOLD COINS.

English *Sovereigns* and *Half-Sovereigns* at their full nominal value; Spanish, Mexican, and South American *Doubloons*, at the rate of 64s. sterling each, and United States *Eagles*, *Half-Eagles*, *Quarter-Eagles*, and *Gold Dollars* at the respective rates of 41s., 20s. 6d., 10s. 3d., and 4s. 1d. sterling.

SILVER COINS.

The silver coins of Great Britain are in circulation, as also *Dollars* of Spain, Mexico, and South America.

Previous to the year 1839 accounts in British Guiana were kept in *Guilders*, *Stivers*, and *Pfennings*.

				English value.
16 Pfennings	=	1 Stiver	=	⅜d.
20 Stivers	=	1 Guilder	=	1s. 1⅓d.

The Current coins were tokens of various denominations, from 3 Guilder Pieces downwards, coined at the British Mint; of British silver coins at the rate of 14 Guilders for 20 shillings sterling, and of Mexican and South American Dollars. In 1839 Dollars and Cents were established as the legal moneys of account; there were no rates fixed by law for the Doubloon and the Dollar; but the old currency was converted into Dollars at the rate of 3 Guilders for a Dollar. The local government paper currency, consisting of *Joe* notes and *Half-Joe* notes (the Joe being equal to 22 guilders), was at the same time rendered convertible into specie of the Dollar currency at the same rate of 3 Guilders for a Dollar.

In order to meet the wants of the negroes and the labouring peasantry, who were in the habit of computing by *Bitts*, that is fractional parts of the currency, the Dollar was declared equal to 12½ *Bitts*, the Shilling to 3 *Bitts*, and Fourpenny Piece to 1 *Bitt* and the Twopenny Piece to *Half-a-Bitt*.

BANK NOTES.

There are notes (of the British Guiana Bank and of the Colonial Bank) for 5, 10, and 20 Dollars. These are payable in silver on demand.

ECUADOR.

The system of money is as follows :—

100 Cents = 1 Dollar = 4s. English.

The coins in circulation are those of the United States and of France and Great Britain at tariff rates ; the average rates for the Dollar in Bills of Exchange on London was, for 1876, 2s. 6d.

CAYENNE (or French Guiana).

Money, weights, and measures, same as those of France.

SURINAM (or Dutch Guiana).

The currency is the same as that of the Netherlands.

BRAZIL.

Brazilian value.		*Systematic name.*		*English value.*
		1 Rei	=	$\frac{1}{87}$d.
1000 Reis	=	1 Milreis (1$000)	=	2s. 3d.

The Milreis (" Hum Milreis ") is the chief unit of Brazilian currency ; its value at par is about 2s. 3d. sterling ; the currency consists of paper money, based exclusively on credit, and of an irregular and debased copper coinage ; the value of the paper money is very fluctuating. In the five years, 1870-75, the exchange value of the milreis fell from about 2s. 3d. to 1s. 2d. sterling.

PAPER MONEY.

The paper money consists of Treasury Notes, and Notes of the Bank of Brazil, for a *Milreis* and upwards. When first issued this paper money was equal to specie in value, thus a 960 *Reis Note* was equal in value to a 3 *Patacon Piece*, or Brazilian Silver Dollar (a Spanish Dollar restamped). In like manner a note for 4000 Reis was originally equal to a gold *Moeda* of 4000 Reis.

The total amount of paper currency in circulation in 1876 was about 182 millions of Milreis, a great portion of which was not represented by a reserve of gold or silver.

Before the introduction of the paper currency, the chief media of payment were the gold Moeda of 400 Reis, and the silver Dollar of 960 Reis.

British Sovereigns are a legal tender in Brazil, at rates which vary with the course of exchange.

COPPER COINS.

The copper coins are pieces of 10, 20, and 40 Reis.

PERU.

Under the law of the 14th February, 1864, the monetary unit is the *Sole* or Dollar.

Accounts are kept in *Pesos*, or *Dollars*, and *Centesimos*, as follows.—

Peruvian value.	*Systematic name.*	*English value.*
	1 Centesimo =	½d.
100 Centesimos =	1 Sole, or Dollar =	4s.*

Table of Peruvian Coins and their French and English value.

Denomination of Coins.	Weight.		Fineness.	French Value.	English Value.
GOLD COINS:—	Grammes	Grains.		F. c.	£ s. d.
20 Soles	32·258		$\frac{900}{1000}$	100 0	4 0 0
10 ,, ...	16·129		,,	50 0	2 0 0
5 ,, ...	8·065		,,	25 0	1 0 0
2 ,, ...	3·226		,,	10 0	0 8 0
1 ,, ...	1·613		,,	5 0	0 4 0
SILVER COINS:—					
1 Sole	25·000		,,	5 0	0 4 0
50 Centesimos ..	12·500		,,	2 30	0 2 0
20 ,, ..	5·000		,,	1 0	0 0 $9\frac{3}{5}$
10 ,, ..	2·500		,,	0 50	0 0 $4\frac{4}{5}$
5 ,, ..	1·250		,,	0 25	0 0 $2\frac{2}{5}$
BRONZE COINS:—					
1 Centesimo ..	..			0 5	0 0 $0\frac{1}{2}$
½ ,, ..	..			0 $2\frac{1}{2}$	0 0 $0\frac{1}{4}$

* This value is for the silver dollar; the average exchange value of the paper dollar is about 3s. 9d.

CHILI.

Under the laws of 9th January, 1851, and 25th October, 1870, the denominations of money in which accounts are kept and the current coins are as follows:—

Chilian value.		*Systematic Name.*		*English value.*
		1 Centavo	=	$\frac{9}{20}$d.
100 Centavos	=	1 Dollar or Peso current	=	3s. 9d.

For many years previous to 1872 the nominal exchange value of the Chilian Dollar was 3s. 9d., but in 1876 it had fallen to 3s. 5d., and this was chiefly due to the fall in the price of silver.

GOLD COINS.

The Condor	=	10 Dollars	=	£1 17s. 6d.
Doblon	=	5 Dollars	=	18s. 9d.
Escudo	=	2 Dollars	=	7s. 6d.
Peso	=	1 Dollar	=	3s. 9d.

The gold coins are all $\frac{900}{1000}$ths fine. The Condor weighs 15·253 grammes, the Doblon 7·627 grammes, the Escudo 3·050 grammes, and the Peso 1·525 grammes.

The Condor, Doblon, and Escudo and Peso are equal respectively to 47 Francs 28 Centimes, 23 Francs 64 Centimes, 9 Francs 45 Centimes, and 4 Francs 73 Centimes French.

SILVER COINS.

The Dollar	weighing	25	grammes	=	3s.	9d.
Half-Dollar	,,	12½	,,	=	1s.	10½d.
Piece of 20 Centavos	,,	5	,,	=		9½d.
,, ,, 10 ,,	,,	2½	,,	=		4½d.
,, ,, 5 ,,	,,	1¼	,,	=		2¼d.

The silver coins are all of the fineness of 900 parts of pure silver to 100 parts alloy.

The Dollar is equal to 5 Francs, the Half-Dollar to 2½ Francs, the 20 Centavo Piece to 1 Franc, and the 10 and 5 Centavo Pieces to 50 and 25 Centimes French.

COPPER COINS.

The copper coins are the *Centavo*, worth about $\frac{6}{10}$d. sterling, and the *Half-Centavo*, worth about $\frac{3}{10}$d. sterling, or a ½d. and ¼d. respectively.

BOLIVIA.

Accounts are kept in *Dollars* and *Centenas* as follows :—

Bolivian value.		*Systematic name.*		*English value.*
		1 Centena	=	$\frac{37}{100}$d.
100 Centenas	=	1 Dollar	=	3s. 1d.

COINS.

The current coins are gold Doubloons and silver Dollars and their subdivisions.

The Bolivian Silver Dollar, when of the full weight of 417$\frac{1}{17}$ Troy grains, and of the fineness of 10 dwts. 20 grains in 12 dwts. (that is, $\frac{9}{10}\frac{5}{12}$ pure), is worth 4s. 2d. sterling, but for many years the coins issued from the Potosi Mint (with the exception of the Dollar) have all been 25 per cent. below the standard. This circumstance has reduced the exchange value of the Bolivian currency to about 3s. 1d. sterling per Dollar.

ARGENTINE REPUBLIC.

BUENOS AYRES.*

The denominations of money used in keeping accounts are *Patacons*, or *Dollars*, and *Centesimos*, as follows :—

Buenos Ayres value.		*Systematic name.*		*English value.*
	1	Centesimo		
100 Centesimos	= 1	Dollar or Patacon (Silver)	=	4s.
	1	,, ,, (Paper)	=	2d.

* The States of the Confederation were Buenos Ayres, Entre-Rios, Corrientes, Santa Fe, Cordova, Santiago, Tucuman, Salta, Catamarca, Rioja, San Juan, San Luis, and Mendoza. Civil disputes led to a dissolution of the Confederacy, and the country is now so many independent provinces, the leading one of which is Buenos Ayres. Buenos Ayres, from its maritime position, is the emporium for the produce of the whole of La Plata, and also for Chili and Peru.

In the year 1857, the Buenos Ayres Government made the gold Doubloon, at the rate of 17 to the Patacon, the chief monetary unit, and divided the Dollar into 100 parts. Previous to that time accounts were kept in *Dollars*, *Reals*, and *Quartos*.

The circulating medium of Buenos Ayres consists principally of an inconvertible paper currency, the value of which is constantly fluctuating. In May, 1876, the value of the paper had fallen so low that the rate was quoted at 122½ dollars currency (moneda corriente) for £1 sterling. Such enormous depreciation of the paper money, in any country indicates a most unsatisfactory financial position. In Buenos Ayres it was the outcome of a prolonged monetary pressure. Too many loans were contracted, and credit was inflated to too great an extent, the excess of imports over exports had to be paid for in specie, the country got drained of bullion, and paper money was issued to an excess, at one time being as much as 920 dollars per head of population; but, if enterprise is restricted within safe dimensions Buenos Ayres, is quite capable of surmounting her difficulties and resuming a sound financial position.

GOLD COINS.

The gold coins, very few of which are in circulation, are *Doubloons* of Mexico, Peru, and Chili, at the rate of 16 silver *Patacons* or Dollars each; the *Double Eagle* (20 Dollars), the *Eagle* (10 Dollars), the *Half-Eagle* (5 Dollars), the *Quarter-Eagle* (2½ Dollars), and the 3 *Dollar Piece* of the United States of North America, at par; the British *Sovereign*, at 4 Patacons 90 Cents; the British *Half-Sovereign*, at 2 Patacons, 45 Cents; the *French Napoleon*, at 3 Patacons, 90 Cents, and the Chilian *Condor*, at 9 Patacons, 20 Cents.

The intrinsic value of the Doubloon is about 64s., or perhaps 64s. 8d. sterling, and thus the value of the Dollar, deduced from that of the Doubloon, would be about 3s. 10d. sterling. In large mercantile transactions gold is the most frequent medium of payment.

SILVER COINS.

The following are the silver coins which are occasionally met with in the circulation, but their amount is very limited, and they can hardly be considered a part of the legal currency. The Spanish *Real*, and 2 *Real*, and 4 *Real Pieces*, 1, ½, and ¼, *Bolivian Dollar Pieces*, *Peruvian*, and *Chilian Dollars*, and the

Patacon or *Silver Dollar* of the Argentine Republic, but this latter has almost wholly disappeared from circulation. It was of the same weight and purity as the Spanish Hard Dollar.

COPPER COINS.

There are some copper coins in circulation which, from being equal to $\frac{1}{8}$th of a Paper Dollar, were called Reals, they are of the same value as the *Centesimo*, viz., $\frac{1}{4}$d. sterling.

PAPER MONEY.

The paper money in circulation consists of Notes of 5, 10, 20, 50, 100, 500, and 1,000 Dollars.

The Paper Currency of Buenos Ayres is not admitted in any of the other States of the Argentine Confederation. The principal medium of circulation in those States is the Bolivian Dollar. Doubloons are also used, but are considered more as merchandise, being sold and bought for a variable number of Bolivian Dollars, generally from 18 to 19. This would give the nominal value of the Bolivian Dollar from 3s. 4$\frac{2}{3}$d. to 3s. 6$\frac{2}{3}$d. Some of the Provinces have also a depreciated Paper Currency.

URUGUAY. (Montevideo.)

Accounts are kept in *Dollars* and *Cents* as follows:—

100 Cents = 1 Dollar = 4s. English.

The currency consists of gold Doubloons, silver Dollars and their subdivisions. The Doubloon is rated at 64s. and the Dollar at 4s. 2d. sterling, but the exchanges are usually quoted over.

PARAGUAY.

The monetary system is as follows:—

100 Centimes = 1 Dollar, or Peso = £0 4s. 0d. English.

The currency is the same as that of Bolivia, namely, gold doubloons, silver dollars, and half-dollars, and 20, 10, and 5

centena pieces, and in bronze 1 and ½ centena pieces; the bronze coins, it was proposed (by the President in his Message to the Chamber of Asuncion on 12th January, 1875), to replace by nickel.

FALKLAND ISLANDS.

The denominations of money used in accounts are *Pounds*, *Shillings*, and *Pence* sterling, and the currency of the islands consists chiefly of British coins.

NEW SOUTH WALES.

VICTORIA, SOUTH AUSTRALIA, WEST AUSTRALIA, TASMANIA, (OR VAN DIEMEN'S LAND).

The moneys of account and the coins in circulation are the same as those of Great Britain. The currency consists almost wholly of British silver coins and of Bank-notes for £1 sterling and upwards. These notes are all payable in specie on demand.

NEW ZEALAND.

Accounts are kept in *Pounds*, *Shillings*, and *Pence* sterling, and the current coins are those of Great Britain.

New Caledonia, the Rotumah Islands, Wallis Islands, Gambier's Island, the Marquesas, or Mandana Islands.

The money is the same as that of France.

THE SANDWICH ISLANDS.

The British denominations of *Pounds*, *Shillings*, and *Pence* sterling have been declared the official moneys of account for

the whole kingdom, but merchants almost always keep their accounts in Dollars and Cents, or Dollars and Reals, as follows:—

Hatwaian value.	*Systematic Name.*	*English value.*
100 Cents, or 8 Reals	= 1 Dollar	= 4s. 2d.

The currency consists of coins of other countries to which are assigned rates affixed by custom, and by the rates at which the Government receives them in payment of duties and taxes. These rates depend on the intrinsic value of the coins, and also on the extent of commercial intercourse with the countries to which the coins belong, and the proximity or distance of those countries. The following are the rates at which the undermentioned foreign coins are current.

GOLD COINS.

	Value in sterling Pounds, Shilgs., Pence.			Value in Dollars, Cents.	
Doubloon of Bolivia and Chili ..	3	2	6	15	0
Chilian Ten Pesos..	1	13	4	8	0
Eagle of the United States of North America	2	1	8	10	0
Brazil, 20,000 Reis	2	1	8	10	0
Sovereign of England and Australia	0	19	9½	4	75
Half-Sovereign ,,	0	9	10¾	2	37½
Ten Thaler Piece of Denmark ..	1	11	3	7	50
Twenty-five Francs of Belgium ..	0	19	2	4	60
Twenty Franc Piece of France ..	0	16	8	4	0
Ten ,, ,, ,, ..	0	8	4	2	0
Five ,, ,, ,, ..	0	4	2	1	50
Central America, Two Escudos ..	0	14	7	3	0
South American Gold Dollar ..	0	3	1½	0	75
California Twenty Dollars	4	1	3	19	50
,, Ten Dollars	1	19	7	9	50
,, Five Dollars	0	18	9	4	50

SILVER COINS.

	Value in sterling Pounds, Shilgs., Pence.			Value in Dollars, Cents	
Five Franc Piece of France	0	4	2	1	0
Dollar of Columbia (Macuquina) ..	0	2	6	0	60
Half-Dollar of Bolivia, Chili and Peru	0	1	6¾	0	37½
Quarter Dollar of Bolivia and Chili	0	0	6½	0	12½
Silver Ruble of Russia	0	3	1½	0	75
Thaler of North Germany	0	2	7½	0	62½
Rupee of India..	0	1	6¾	0	37½
Half-Crown of England	0	2	7½	0	56½
Shilling ,, ...	0	1	0½	0	25
Sixpence ,, ...	0	0	6½	0	6½

The French 5 Franc Piece being so convenient in the absence of any American silver Dollar sustains a relatively high current value. It passes for a Dollar, and is the common silver coin.

COPPER COIN.

Cent of the United States of North America = ½d.

VENEZUELA.

The monetary system and the current coins are the same as those in Columbia.

THE MARIAN ISLANDS, AND TINIAN.

The money is the same as that of Spain.

PART II.

WEIGHTS AND MEASURES.

GREAT BRITAIN AND IRELAND.

METRIC WEIGHTS AND MEASURES.

Metric Weights and Measures in shops are not legal, but under Act 27 & 28 Vic. c. 117 they may be referred to in written agreements and contracts, and they are very generally used in scientific research.

IMPERIAL MEASURES OF LENGTH.

The yard is the standard measure of length; when compared with a pendulum, vibrating seconds of mean time, in the latitude of London, in a vacuum at the level of the sea, it is in the proportion of 36 inches to 39·1393 inches.

The metric equivalent of measures of length, surface, and capacity, given in these tables are based upon the following values:—Metre = 39·37079 inches, this being the existing legal and scientific equivalent in English measure at 62° F. of the metre at 32° F. Litre = ·2202443 gallon.

On comparison of the relative weight of distilled water contained in a gallon and in a litre at the same temperature, and on comparison of a standard brass yard with a standard brass metre at the same temperature in ordinary air at the average temperature of 62° F., as they are commonly used, corrected values have been assigned to the metre and the litre, namely, metre = 39·38203 inches; litre = ·22018 gallon. I have not, however, adopted these corrected values in the tables of equivalents, because, although sanctioned by the Standards Commission, they have not received the sanction of Parliament, and until that is the case they cannot be legally adopted in Great Britain and Ireland. Tables based on these corrected values are given in Appendix No. 1.

English value.	*Systematic name.*	*Metric Equivalent.*
12 Lines	= 1 Inch	= 2·5399 Centimetres
12 Inches	= 1 Foot	= 30·4794 ,,
3 Feet	= 1 Yard	= 91·4383 ,,
5½ Yards	= 1 Pole, Rod, or Perch	= 5·02911 Metres.
4 Poles, or 100 Links	= 1 Chain*	= 20·11643 ,,
40 Perches or 10 Chains	= 1 Furlong	= 201·16436 ,,
8 Furlongs, or 1760 Yards	= 1 Mile	= 1·609314 Kilometres.
3 Miles	= 1 League	= 4·82794 ,,

The inch is also divided into *fourths* and *eighths*, and sometimes into *tenths* and *twelfths*.

A Palm is 3, a hand 4, a span 9, a cubit 18, and a sacred cubit 22 inches. A Military Pace is 2½ feet. A Geometrical or Itinerary pace is 5 feet, it is the space from † "the elevation of one foot to the same foot set down again, mediated by a step of the other foot;" 1000 of such paces were reckoned to a mile. A fathom is 6 feet. A Cable's length is 120 fathoms. A degree of the Equator is 69·1613 miles, and a degree of the Meridian is 69·046 miles or 364565 feet.

CLOTH MEASURES.

			Centimetres.
2¼ Inches	= 1 Nail	=	$5\frac{7}{10}$
4 Nails	= 1 Quarter	=	$22\frac{7}{8}$
4 Quarters	= 1 Yard	=	$91\frac{3}{8}$
5 Quarters	= 1 Ell	=	$114\frac{1}{8}$

* A builder's chain is 100 feet; the chain in the table is the surveyor's chain equal to 66 feet.

† Holder.

IMPERIAL MEASURES OF SURFACE.

English value.	*Systematic name.*	*Metric Equivalent.*
	1 Sq. Inch	= 6·451 Sq. Centimetres
144 Sq. Inches	= 1 Sq. Foot	= 9·28996 Sq. Decimetres
9 Sq. Feet	= 1 Sq. Yard	= 83·60971 Sq. Decimetres
30¼ Sq. Yards	= 1 Perch or Rod	= 25·2775 Sq. Metres
40 Perches	= 1 Rood	= 10·116775 Acres
4 Roods	= 1 Acre	= ·404671 Hectare
640 Acres	= 1 Square Mile	= 258·98944 Hectares

MEASURES OF CUBIC CAPACITY.

English value.	*Systematic name.*	*Metric Equivalent.*
	1 Cubic Inch	= 16·38618 CubicCentimetres
1728 Cubic Inches	= 1 Cubic Foot	= ·028315 Cubic Metres
27 Cubic Feet	= 1 Cubic Yard	= ·764513 ,, ,,

A load of rough timber is 40 and of hewn timber 50 cubic feet; a cubic yard of earth is also called a load. A ton (ship measurement) is 42 cubic feet. A stack of wood (3ft. × 3ft. × 12ft.) is 108 cubic feet; it is also called a French cord. A cord of fire wood (4ft. × 4ft. × 8ft.) is 128 cubic feet.

MEASURES OF CAPACITY FOR LIQUIDS AND DRY GOODS NET.

English value.	*Systematic name.*	*Metric Equivalent*
8·665 Cubic Inches	= 1 Gill	= 1·41887 Decilitres
4 Gills	= 1 Pint	= 5·67551 ,,
2 Pints	= 1 Quart	= 1·1351 Litres
4 Quarts	= 1 Gallon	= 4·54041 ,,
2 Gallons	= 1 Peck	= 9·08082 ,,
4 Pecks	= 1 Bushel	= 3·63233 Dekalitres
8 Bushels	= 1 Quarter	= 2·90586 Hectolitres

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* An Imperial Pint of distilled water weighed in vacuo, at its greatest density is equal to 8750 Grains Troy, or 20 Ounces Avoirdupois.

By the Act 5th Geo. IV., in 1824, the unit and Standard of capacity for all liquids, as also for dry goods not measured by heaped measure, was declared to be the Imperial Gallon, containing 10 pounds Avoirdupois weight of distilled water, weighed in air at the temperature of 62 degrees of Fahrenheit's thermometer, the barometer being at 30 inches. The Imperial bushel was defined as containing 80lbs. of distilled water. A cubic inch of water was declared, by Section 5 of the Act, to weigh 252·458 grains, and the capacity of the gallon was declared in Section 14 of the Act, to be 277·274 cubic inches; and deduced from this the capacity of the bushel is 2218·192 cubic inches.*

The Standard Imperial bushel is cylindrical in form, its internal measurement is very nearly 18¼ inches in diameter and 8¼ inches high.

HEAPED MEASURE.

The Standard measure for all things commonly sold by heaped measure was declared to be the Imperial bushel, made round with a plain and even bottom, and 19½ inches from outside to outside; the things were to be heaped up in the bushel, and the heap was to be a cone of at least 6 inches high, the outside of the bushel being the extremity of the base of the cone; 3 bushels were declared to be a sack, and 12 sacks a chaldron. The capacity of such a cone would be 597·2967 inches, or ·345 cubic foot; so that the *heaped bushel* was of the capacity of 2815·4887 cubic inches, or 1·629 cubic foot; the sack 4·888 and the chaldron 58·656 cubic feet.†

Heaped measure having been been found to be "liable to considerable variation," was abolished by the Acts 4 & 5 Wm. IV., c. 49, in 1834, and 5 & 6 Wm. IV., c. 63, in 1835, and coals were from that time to be sold by weight and not by measure. Section 8 of the Act of 1835 enacted that all articles theretofore sold by heaped measure, which from their size and shape were incapable of being struck and from their nature and quality may not be sold by weight, were to be thenceforth

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* The more exact capacity will be found on computation to be for the gallon 277·2738435 and for the bushel 2218·190748 cubic inches.

† An interesting and correct account of the legal measures of capacity in use previous to the passing of the Act of 1824 will be found in the 10th Report of the Warden of the Standards (1876).

sold "by a bushel measure corresponding in shape with the bushel prescribed by 5 Geo. IV., c. 74, for the sale of heaped measure, or by any multiple or aliquot part thereof, filled in all parts so nearly to the level of the brim as the size and shape of the articles sold will admit." Section 9 enacted that all coals, slack culm, and cannel of every description were to be sold by weight and not by measure. This did not apply to coke, which is still sold by measure, the chaldron of 12 sacks or 36 bushels. Coke absorbs a large quantity of water (over ¼ of its weight when dry) and its weight could be increased at the discretion of the seller.

It is not certain whether the legal *chaldron* of coke is 36 *heaped* or 36 *struck* bushels, that is, whether its legal capacity is 46·212 or 58·656 cubic feet; the London Gas Companies sell their coke by the chaldron of 36 *heaped* bushels.

The legal weight of a chaldron of coals is 25½ cwt.

MEDICAL SUB-DIVISIONS OF THE IMPERIAL PINT.

English value.		*Systematic name.*		*Metric equivalent.*
				Millilliters.
		Minim (*m*)	=	·05915960937
60 Minims	=1	Fluid Drachm (f.ʒ)	=	3·5495765625
8 Fluid Drachms	=1	Fluid Ounce (f.ʒ)	=	28·39661251
				Litres.
20 Fluid Ounces	=1	Imperial Pint (0·)	=	·567936
8 Pints	=1	Gallon	=	4·543487

WEIGHTS.

The system of British Imperial Weights, of which the chief unit is the Avoirdupois pound of 7,000 Troy grains, is based upon and derived from the Troy pound, of 5,760 Troy grains, which, in the Act 5, George IV., was declared to be "the unit or only standard measure of weight from which all other weights shall be derived, computed, and ascertained."

A cubic inch of distilled water, weighed in air by brass weights at the temperature of 62 degrees Fahrenheit, the barometer being at 30 inches, weighs 252·458 grains; the Troy pound contains 5,760 and the Avoirdupois pound 7,000 such grains. Upon these two units, namely, the *Troy pound* and the *Avoirdupois pound* are based the Avoirdupois and Troy scales, the ultimate unit in both being the Troy grain. Avoirdupois weight is used in the chief transactions of commerce.

Troy weight is used in assays; in ascertaining the standards of gold and silver, the operations of coinage, the levying duty on gold and silver plate, and by bullion dealers and manufacturers of and dealers in gold and silver wares.

The abolition of the Troy weight with the view of simplifying the British system of weights was recommended by the Standards' Commissioners in their fourth report dated 21st May, 1870.

AVOIRDUPOIS WEIGHTS.

English value.	*Systematic name.*	*Metric equivalent.*
		Grammes.
	1 Grain	= ·0648
$27\frac{11}{32}$ Troy Grains	= 1 Dram (dr.)	= 1·7718476
16 Drams	= 1 Ounce (oz.)	= 28·3495625
16 Ounces (or 7,000 Troy Grains)	= 1 Pound (lb.)	= 453·5925
		Kilogrammes.
14 Pounds	= 1 Stone	= 6·350302
28 Pounds	= 1 Quarter (qr.)	= 12·700604
4 Quarters (or 112 lbs.)	= 1 Hundredweight (cwt.)	= 50·802416
20 Hundredweight	= 1 Ton	= 1016·04832

TROY WEIGHT.

English value.	*Systematic name.*	*Metric Equivalent.*
		Milligrammes.
	1 Grain (gr.)	= 64·799
		Grammes.
24 Grains	= 1 Pennyweight (dwt.)	= 1·555176
20 Pennyweights	= 1 Ounce or Carat (oz.)	= 31·10352
12 Ounces	= 1 Pound (lb.)	= 373·24224

Pearls are weighed by the Troy standard, but the Pennyweight is divided into 30 grains instead of 24; and hence the Pearl ounce contains 600 Pearl grains, and 4 Troy grains are equal to 5 Pearl grains.

CARAT WEIGHT.

Carat weight is used exclusively for weighing diamonds. It is a customary weight; it has never been legalised, and there is no actual standard. It is, however, recognized that 151¼ diamond carats are equal to one ounce Troy, so that the diamond carat is equal to 3·16831 Troy grains.

For weighing diamonds there are sets of carat weights, consisting of weights of 200, 100, 64, 32, 16, 8, 4, 3, 2, carats, and of 1, ½, ¼, ⅛, 1/16, 1/32, 1/64 carat.

APOTHECARIES' WEIGHT.

		1 Grain (gr.)	=	Milligrammes 64·799
437½ Grains	=	1 Ounce (oz.)	=	Grammes. 28·34956
16 Ounces	=	1 Pound (lb.)	=	453·593

The Apothecaries' Weights superseded by the above are as follows :—

OLD APOTHECARIES' WEIGHT.

20 Grains	=	1 Scruple (℈)	=	Grammes. 1·29598
3 Scruples	=	1 Drachm (ʒ)	=	3·88794
8 Drachms	=	1 Ounce (ʒ)	=	31·10352
12 Ounces	=	1 Pound	=	373·24224

MISCELLANEOUS WEIGHTS, MEASURES, AND NUMERICAL QUANTITIES.

Bag of Hops	.. 2½ cwt.
Bag of Hamburg Rags	.. 2½ cwt.
Bag of Rice	..168lbs.
Bale of Mediterranean Rags	.. 4½ to 5 cwt.
Bale of Feathers	.. about 1 cwt.
Ball or Boll of Scotch Oatmeal	..140 lbs.
Barrel of Beer	.. 36 gallons
Barrel of American Flour	196 lbs.
Barrel of Soap	..256 lbs.
Barrel (in Ireland for Wheat, Peas, Beans and Rye)	.. 20 stone
Barrel (Barley, Beer, Rape Seed)	.. 16 stone
Barrel of Coal-Tar, or Stockholm Tar	.. 25 gallons
Barrel of Lime (Ireland)	.. 32 gallons
Barrel of Oats	.. 14 stone
Barrel of Gunpowder	100 lbs.
Barrel of Malt	.. 12 stone
Barrel of Anchovies	.. 30 lbs.
Bundle of Iron	.. 56 lbs.
Bundle of Iron Wire up to 20 guage	.. 63 lbs.
Bundle of Iron Wire above 20 guage	.. 60 lbs.
Bushel of Barley	.. 47 to 49 lbs.
Bushel of Bere	.. 42 lbs.
Bushel of Coal	.. 80 lbs.
Bushel of Coke	.. 40 lbs.
Bushel of Flour	.. 56 lbs
Bushel of Malt	.. 40 lbs.
Bushel of Oats	.. 38 to 40 lbs.
Bushel of Rye	.. 55 lbs.
Bushel of Wheat	.. 57 to 60 lbs.
Butt of Beer	.. 108 gallons
Butt of Sherry	.. 110 gallons
Cask of Blackiead	.. abt. 11½ lbs.
Cask of Bristles	.. 10 cwt.
Clove of Wool	.. 7 lbs.
Clove of Cheese	.. 8 lbs.
Coomb	.. 4 bushels
Dozen	.. 12 articles
Dicker	.. the number or quantity of 10 as 10 hides or skins.
Faggot of Steel	..120 lbs.

MISCELLANEOUS WEIGHTS, &c.—*continued.*

Firkin of Beer or Ale	9 gallons
Firkin of Butter	56 lbs.
Firkin of Raisins	112 lbs.
Firkin of Soap	64 lbs.
Father of Lead	19½ cwt.
Great Hundred of Timber	120 deals
Gross (a)	144 articles
Hundred feet of Timber	120 deals
Hogshead of Tobacco	12 to 18 cwt.
Hogshead of Beer	54 gallons
Hogshead of Wine	63 gallons
Kilderkin of Beer	18 gallons
Last of Codfish, White Herrings, Meal, and Ashes	12 barrels
Last of Hides	144
Last of Leather,	20 dickers or 200 hides
Last of Grain	80 bushels
Last of Gunpowder	24 barrels or 2400 lbs.
Last of Flour or Feathers	17 cwt.
Last of Herrings	20 barrels 10000
Last of Wool	12 sacks or 4368 lbs. av.
Load of Straw	11cwt.,2qrs. 8lbs. 1296 lbs.
,, ,, New Hay	36trusses of 60 lbs...2160 lbs.
,, ,, Old Hay	36trusses of 56lbs...2016lbs.
Load of Bricks	500
,, of Tiles	1000
Pack of Wool	240 lbs.
Peck of Salt	14 lbs.
Pipe of Madeira Wine	92 gallons
Pipe of Port Wine	115 gallons
Puncheon of Wine	84 gallons
Pocket of Hops	1½ to 2 cwt.
Quarter of Timber	80 deals
Quintal	100 lbs
Roll of Parchment	60 skins
Sack of Flour	280 lbs.
Sack of Wool	364 lbs. av.
Score	20 articles
Seam of Glass	120 lbs.
Stone of Butcher's meat	8 lbs.
,, ,, Cheese	16 lbs.
,, ,, Fish	8 lbs.
,, ,, Glass	5 lbs.
,, ,, Hemp	32 lbs.
,, ,, Iron	14 lbs.
,, ,, Iron wire up to 20 guage	10½ lbs.
,, ,, Iron wire above 20 guage	10 lbs.
,, ,, Wool sold by grower	14 lbs.
,, ,, Wool sold by Woolstaplers to each other	15 lbs.
Tierce of Wine	42 gallons
Truss of Straw	36 lbs.
,, ,, Old Hay	56 lbs.
,, ,, New Hay	60 lbs.
Tun of Wine	252 gallons

THE CHANNEL ISLANDS.

VIZ.,

GUERNSEY, JERSEY, ALDERNEY, AND SARK.

The weights and measures are the same as those of the United Kingdom of Great Britain and Ireland.

FRANCE.

The system of weights and measures is the *Metric*. France took the initiative in introducing this system into Europe. The fundamental basis of the Metric system is a quadrant of the meridian, that is, the distance from the Equator to the north pole. A quadrant is divided into ten million equal parts, and one of these parts is called a *Metre*. The metre is the unit of measures of length as well as of all weights and measures, and from it, by decimal multiplication and division, all other measures are derived. It is equal to 39·37079 English inches.

The square of 10 Metres (in other words, a square *Decametre*,) is the unit of surface measure, and is called an *Are*. It is equal to 119·60332 English square yards or 3·9558 perches.

The cube of the tenth part of the Metre, that is, a cubic *Decimetre*, is the unit of measures of capacity, and is called a *Litre*. It is equal to 1·7619 Imperial British pints.

The cube of a Metre is the unit of solid measure, and is called a *Stere*. It is equal to 35·317 English cubic feet.

The unit of weight is the *Gramme*, it is the weight *in vacuo* of such a quantity of distilled water, at its greatest density (viz., at 39·2° Far.†), as would be sufficient to fill a cube described upon the *one hundredth part* of a Metre. In other words, it is the weight of a cubic Centimetre of distilled water at a temperature of 39·2° F. It is equal to 15·43234874 Troy grains, as determined by Professor Miller in 1844.

The prefixes denoting multiples are derived from Greek, and those denoting divisions, from Latin, thus:—Decca, 10 times; Hecto, 100 times; Kilo, 1,000 times; Myrio, 10,000 times; Deci, $\frac{1}{10}$th part; Centi, $\frac{1}{100}$th part; Milli, $\frac{1}{1000}$th part.

MEASURES OF LENGTH.

French value.	*Systematic name.*		*English value.*
			Inches.
Thousandth part of Metre	= 1 Millimetre	=	·03937079
Hundredth part of Metre	= 1 Centimetre	=	·3937079
Tenth part of a Metre	= 1 Decimetre	=	3·937079
Ten millionth part of distance from Pole to Equator	= 1 Metre	=	39·37079
			Yards.
10 Metres	= 1 Decametre	=	10·93633
100 Metres	= 1 Hectometre	=	109·36330
1000 Metres	= 1 Kilometre	=	1093·63305

MEASURES OF LENGTH—*continued.*

French value.	*Systematic name.*	*English value.*
		Miles.
10,000 Metres	= 1 Myriametre	= 6·2188
League of 4 kilometres	= 4000 Metres	
League of 25 to a degree	= 4444 Metres	
League nautical of 20 to a degree	= 5556 Metres	
Mile, nautical of 60 to a degree	= 1852 Metres.	

MEASURES OF SURFACE.

French Value.	*Systematic Name.*	*English Value.*
100 Sq. Millimetres	= 1 Sq. Centimetre	= ·15500590422192 Sq. in.
100 Sq. Centimetres	= 1 Sq. Decimetre	= 15.500590422192 ,,
100 Sq. Decimetres	= 1 Centiare or Sq. Metre	= 10·7642989043 Square ft. 1·19603321 Square yards.
100 Sq. Metres	= 1 Are or Sq. Decametre.	= 119·603321 ,,
100 Sq. Decametres	= 1 Hectare * or 1 Sq. Hectometre	= 2·47114299 Acres.

The unit for measurement of land is the square Decametre, called in this case an *Are*. Its subdivision is the *Centiare* (100th part of an Are), or square Metre, and its multiple is the *Hectare* (100 Ares), or square Hectometre. There is also the *Decare* of 10 Ares equal to 39¼ Roods.

CUBIC, OR SOLID MEASURES.

In the measurement of timber and other solid coherent substances, the *Cubic Metre*, in this case called a *Stere*, is the unit employed as follows :—

French value.	*Systematic name.*	*English value.*
$\frac{1}{10}$th of a Stere	= 1 Decistere	= 3·531658 cubic feet
10 Decisteres	= 1 Stere	= 35·31658 ,,
10 Steres	= 1 Decastere	= 353·1658 ,, or 13·08021 cubic yds

* The Hectare is equal to 2 Acres, 1 Rood, 35 Perches, English statute measure, nearly.

MEASURE OF CAPACITY.

The unit of measures of capacity is the Litre; it is a measure whose length, width and depth are each equal to 1 Decimetre. It is therefore a Cubic Decimetre.

French value.	*Systematic name.*	*English value.*
1000th of a cubic Decimetre	= 1 Millilitre =	16·9 Minims.
10 Millilitres	= 1 Centilitre =	2·819 Fluid drachms
10 Centiletres	= 1 Decilitre =	3·523 ,, ounces
10 Decilitres, or a Cubic Decimetre	= 1 Litre =	1·761954 Imp. pint
10 Litres	= 1 Decalitre =	2·20244 ,, gallons
10 Decalitres	= 1 Hectolitre =	22·02443 ,, ,, or 2·75305 ,, bushels
10 Hectolitres	= 1 Kilolitre =	3·44131 ,, quarters

For convenience the *Half-Litres* and *Double-Litres* and *Half-Decilitres* and *Double-Decilitres* are sanctioned by law; and with the *Litre* are in daily use. The English value of the *Decilitre* may be roughly stated at a little more than $\frac{1}{8}$ths of a Gill, and that of the Litre about 7 Gills or $1\frac{3}{4}$ Pints. These measures, and also the multiples of the Litre, are made in a cylindrical form, but the correctness of the Litre as a measure depends upon its containing precisely a Cubic Decimetre, and not upon its shape.

WEIGHTS.

The Gramme, that is the weight *in vacuo* of a Cubic Centimetre of distilled water at a temperature of 39·2° Fahrenheit (4° centigrade), is the unit of weight. It is equal to 15·43234874 grains Troy, as determined by Professor Miller in 1844.

The Gramme and its subdivisions, the Decigramme (10th of a Gramme) the Centigramme (100th of a Gramme), and the Milligramme (1000th of a Gramme) are the weights usually employed in the minute operations of scientific experiments.

TABLE OF WEIGHTS.

French Value.		*Systematic name.*		*English Value.*
				Troy Grains.
1000th of a Gramme	=	1 Milligramme	=	·0154323487
10 Milligrammes	=	1 Centigramme	=	·1543234874
10 Centigrammes	=	1 Decigramme	=	1·543234874
10 Decigrammes	=	1 Gramme	=	15·43234874
10 Grammes	=	1 Decagramme	=	154·3234874
				Ounces.
10 Decagrammes	=	1 Hectogramme	=	3·52739
				lbs.
10 Hectogrammes	=	1 Kilogramme	=	2·20462
10 Kilogrammes	=	1 Myriagramme	=	22·04621
				Cwt.
10 Myriagrammes	=	1 Quintal Metrique	=	1·96841
10 Quintals	=	1 Millier or Ton	=	19·68411

A Litre or Cubic Decimetre is equal to 1,000 Cubic Centimetres, and a Cubic Centimetre is a Gramme, a Litre of distilled water at 39·2° F. is equal to a Kilogramme, and any number of Litres of distilled water at that temperature are equal in weight to a corresponding number of Kilogrammes.

Conversely the number of Grammes representing the weight of a quantity of water contained in a vessel will be the number representing the cubic capacity of the vessel in Centimetres. Hence, when the cubic capacity of a vessel is known, the weight of water which it would contain can be readily calculated without having recourse to actual weighing.

From this mutual relation of the Kilogramme and the Litre, the weight of any substance of known density or specific gravity can be calculated from its cubic capacity, or, conversely, its cubic capacity can be calculated from its weight.

RUSSIA.

MEASURES OF LENGTH.

Russian value		*Systematic name.*		*English value.*
		1 Vershok	=	1¾ inches.
8 Vershoks	=	1 Stopa	=	14 ,,
2 Stopas, or 16 Vershoks	=	1 Arschine	=	28 ,,
3 Arschines	=	1 Saschen	=	7 feet.
500 Saschens	=	1 Verst	=	1166⅔ yds.

MEASURES OF SURFACE.

Russian value.		*Systematic name.*		*English value.*
9 Square Archines	=	1 Square Saschene	=	784 sq. inches.
2400 Square Sacshenes	=	1 Desatine	=	13067 sq. yds.

The *Desatine* is equal to 2 acres, 2 roods, 32 poles, English.

MEASURES OF CAPACITY FOR LIQUIDS.

Russian value.		*Systematic name.*		*English value.*
				Of a Gill, nearly.
		1 Tscharkey	=	·86
				Imperial gallons.
100 Tscharkeys	=	1 Vedro	=	2·7049
3 Vedros	=	1 Anker	=	8·1147
40 Vedros	=	1 Sarokowaja	=	108·196

100 Vedros are equal to 270·6955 British Imperial gallons. The Kruschka is a measure equal to 10 Tscharkeys, or the $\frac{1}{10}$th of a Vedro, and equivalent to 1·08196 Imperial Quart.

MEASURES OF CAPACITY FOR DRY GOODS.

Russian value.		*Systematic name.*		*English value.*
				Impl. Quarts.
		1 Garnietz	=	5·7696
2 Garnietz	=	1 Tschetwerka	=	Impl. Gallons. 1·4424 or Bushel. ·1803
4 Tschetwerkas	=	1 Tschetwerik	=	Pecks. 2·8852 or Bushel. ·7213
				Bushels.
2 Tschetweriks	=	1 Pajak	=	1·4426
2 Pajaks	=	1 Osmin	=	2·8852
2 Osmins	=	1 Tschetwert	=	5·7704
				Impl. Quarters.
16 Tschetwerts	=	1 Last	=	11·5408

A *Tschetwert* is usually reckoned as equal to 5$\frac{3}{4}$ Imperial Bushels, and 100 Tschetwerts to 72 Imperial Quarters, but the more exact value is 72·1308 Imperial Quarters. At St. Petersburg a Tschetwert is sometimes reckoned at 70$\frac{1}{2}$ Imperial Quarters. 100 British Imperial Quarters are equal to 138·637 Tschetwerts.

WEIGHTS.

Russian value.	*Systematic name.*	*Metric value.*	*English value.*
	1 Dola	= Grammes. ·04444 =	Grains. ·68574
96 Dolis	= 1 Zolotnick	= 4·2458 =	65·83054
3 Zolotnicks	= 1 Lotti	= 12·79974 =	197·49162
8 Zolotnicks	= 1 Lana	= 34·13264 =	526·64432
12 Lanas, or 32 Lotti	= 1 Funt (Pound)	= 409·51196 =	lb. Av. ·902818
40 Funts	= 1 Pud (or Pood)	= Kilogramme. 16·38047 =	36·112739
10 Puds	= 1 Berkovitz	= 163·804784 =	361·12739
8 Berkovitz	= 1 Packen	= 491·41435 =	1083·38217

The *Funt* or pound given in the table is the Commercial and Monetary Standard pound; it contains 96 Zolotnicks or 9,216 Dolis. The weights in use of this Standard are 1 pound, 48, 24, 12, 6, 3, 2, 1 Zolotnicks, and 48, 24, 12, 6, 3, 2, 1 Doli, and $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ Dola.

There is also the Medicinal or Apothecaries' *Funt* or pound; it is $\frac{7}{8}$ of the Commercial and Military Standard pounds, and contains 8,064 Dolis.

It is equal to 358·32297 Metric Grammes, or 5529·76502 British Imperial Grains. It is divided into 16 ounces; the ounce is equal to 29·86025 Metric Grammes, or 460·81375 British Imperial Grains. The ounce is divided into 8 drachms. The drachm is equal to 3·73253 Metric Grammes, or 57·60172 British Imperial grains. The drachm is divided into 3 scruples. The Scruple is equal to 1·24417 Metric Grammes, or 19·30057 British Imperial Grains. The scruple is divided into 20 grains. The grain is equal to ·06221 Metric Grammes, or ·96003 British Imperial grain.

The Weights of the Medicinal or Apothecaries' Standard in use are 1 pound, 8, 4, 2, 1 ounces, 4, 2, 1$\frac{1}{2}$, 1 drachms, 2, 1$\frac{1}{2}$, 1 scruple, 10, 5, 3, 2, 1, $\frac{1}{2}$, $\frac{1}{4}$ grain.

POLAND.

Since 1831 the legal weights and measures have been those of Russia. Previous to that date they were as follows:—

OLD MEASURES OF LENGTH.

Polish Value.		*Systematic name.*		*English Value.*
				Inches.
		1 Cal	=	·9344
6 Calow	=	1 Cwierc	=	5·6064
2 Cwierc	=	1 Stopa	=	11·2128
				Feet.
2 Stopas	=	1 Loziec	=	22·4256
3 Loziec	=	1 Sazen	=	67·2768
		1 Stopa of Cracow	=	14·03
				Yards.
		1 Pretow	=	4·7245
10 Pretow, or 100 Precikow, or 1800 Calow	=	1 Sznurow	=	47 245

The Verst of Russia is the unit of distance measures. A league is 8 Versts, or 29633 Stopas, and is equal to 5·3048 English Miles.

OLD SURFACE OR SQUARE MEASURES.

Polish Value.		*Systematic name.*		*English Value.*
				Acres.
		1 Morgow	=	1·3829
30 Morgow	=	1 Wloka	=	41·486

The Morgow is subdivided into 90 Square Sznurow, each Square Sznurow into 100 Square Pretow, each Square Pretow into 100 Square Precikow.

AUSTRO-HUNGARIAN EMPIRE.

Under the law of the 23rd July, 1871, the Metric System (see France) of Weights and Measures was made permissive from the 1st January, 1873, and compulsory from the 1st January, 1876, and since the latter date Metric Weights and Measures have been used exclusively in trade and commerce.

MEASURES OF LENGTH.

The Meter of 10 Decimeters, or 100 Centimeters, or 1000 Millimeters; the Kilometer of 1000 Meters; and the Myriameter of 10 Kilometers. The legal standard measures actually in use are of the length of 2 and 5 Decimeters, and of 2, 4, 5, 10, and 20 Meters.

MEASURES OF SURFACE.

The general Surface Measures are the squares of the measures of length. The units of Special Surface Measures for land are the *Square Meter*, the *Ar* of 100 Square Meters, and the *Hektar* of 100 Ars.

CUBIC MEASURES.

The general Cubic Measures are the Cubes of the measures of length.

MEASURES OF CAPACITY.

The Liter, of 10 Decliters or 100 Centiliters; and the Hektoliter of 100 Liters.

WEIGHTS.

The Kilogramm divided into 100 Dekagramms, or 1000 Gramms, the Gramm being divided into 10 Decigramms, or 100 Centigramms, or 1000 Milligramms. The Ton is 1000 Kilogramms.

EQUIVALENTS OF NEW AND OLD AUSTRIAN WEIGHTS AND MEASURES.

MEASURES OF LENGTH.

						English Value.
1 Meter	=	·5272916	Vienna Klafter	=	39·37079	inches
1 ,,	=	3 Fuss, 1 Zoll, 11·580 Linien		=	3·28089	feet
1 ,,	=	1·286077	Ellen	=	1·09363	yard
1 Centimeter	=	·094912	Faust (hand)	=	·39370	inch
1 Kilometer	=	·131823	Post Mile	=	1093·63305	yards
1 Myriameter	=	1·318229	,,	=	6·21382	Miles
1 Vienna Klafter	=	1·8964487	Meter	=	2·87405	yards
1 Fuss	=	0·316081	,,	=	1·03702	foot
1 Elle	=	0·777558	,,	=	30·61307	inches
1 Austrian post mile	=	7·585956	Kilometers	=	4·71376	miles
1 ,, ,,	=	0·75859	Myriameters	=	8296·23036	yards
1 Faust, or hand	=	10·53602	Centimeters	=	4·1481143	inches

MEASURES OF SURFACE.

1 Square Meter	=	0·278036	Square Klafter	=	10·764299	sq. fe
1 ,, ,,	=	10·00931	Square Fuss	=	1·196033	sq. yd
1 Ar	=	27·80364	Square Klafter	=	119·60332	sq. yd
1 Hektar	=	1·737727	Joch	=	2·47114	acres
1 Square Klafter	=	3·596652	Square Meter	=	4·3017	sq. yd
1 Square Fuss	=	0·099907	,,	=	1·075428	sq. fo
1 Austrian Joch	=	57·54642	Ar	=	1·42205	acre
1 ,, ,,	=	0·5754642	Hektar	=	6882·743231	sq. yd

CUBIC MEASURES.

1 Cubik Meter	=	0·146606	Cubik Klafter	=	1·30802 cubik yds
1 „ „	=	31·66695	„ Fuss	=	35·31658 cubik fee
1 Cubik Klafter	=	6·820992	„ Meters	=	240·894109 „
1 Cubik Fuss	=	0·031578	„ „	=	1·11525 „

MEASURES OF CAPACITY FOR DRY GOODS.

1 Hektoliter	=	1·626365	Metzen	=	2·75305 bushels
1 Liter	=	0·016263	„	=	1·76195 pint
1 Metzen	=	61·48682	Liters	=	1·692732 bushels
1 Muth	=	18·446046	Hectoliters	=	6·347745 quarter

MEASURES OF CAPACITY FOR LIQUIDS.

1 Hektoliter	=	1·767129	Eimer	=	22·02443 gallons
1 Liter	=	0·7068515	Mass	=	0·88097 quart
1 Eimer	=	0·565890	Hektoliter	=	12·463404 gallons
1 Mass	=	1·414724	Liter	=	1·24633 quarts

WEIGHTS.

1 Kilogramm	=	1·785523	Pfund	=	2·20462 lbs. av.
1 Dekagramm	=	0·571367	Loth	=	154·32348 grains
1 Ton (Metric)	=	1785·523	Pfund	=	19·68411 cwt.
1 Kilogramm	=	2·00	Zoll-Pfund	=	35·27394 ozs. av.
1 „	=	2·380697	Apothecaries' Pfund	=	564·38304 drams av.
1 „	=	3·562928	Marks	=	32·150726 ozs. troy
1 Gramm	=	0.286459	Ducat	=	15·432348 grains
1 „	=	4·855099	Karats	=	0·56438 drams av.
1 „	=	0·06	Post-Loth	=	15·43234 grains
1 Pfund	=	0·560060	Kilogramm	=	1·23472 lbs. av.
1 Centner	=	56·006	Pfund	=	123·47201 „
1 Loth	=	1·750187	Dekagramm	=	9·87775 drams av.
1 Zoll Centner	=	50·00	Kilogramm	=	110·23106 lbs. av.
1 Zoll-Pfund	=	0·5	„	=	1·10231 „
1 Apothecaries' Pfund	=	0·420045	„	=	0·92604 „
1 Mark	=	0·280668	„	=	0·618766 „
1 Ducat	=	3·490896	Gramm	=	53·87272 grains
1 Karat	=	0·205969	„	=	3·17858 „
1 Post Loth	=	16·666667	„	=	257·20581 „

In the old Austrian system the measures of length were the Zoll, Fuss, Elle, and Klafter; the Klafter was 6 and the Elle 2 Fuss, and the Fuss was 12 Zoll.

The Measures of Surface were the Joch of 1600 Square Klafter, each of 36 Square Fuss.

The Cubic Measures were the Kubik Klafter of 216 Kubik Fuss.

The Measures of Capacity for Dry Goods were the Muth of 30 Metzen, the Metze of 4 Viertel, or 8 Achtel, or 16 Muhlmassel, or 32 fullermassel or 128 becker; and each becker was divided into 8 probmetzen.

The Liquid Measures were the fuder of 32 eimer; the eimer of 4 viertel; the viertel of 10 mass; the mass of 2 kannen; the kanne of 2 siedel; and the seidel of 2 pfiff.

The Weights were the Commercial Centner of 100 pfund, and the pfund of 16 unzen, or 32 loth, each loth being divided into 4 quentchen. The mark of 2 vierdinges, or 8 unzen, or 16 loth, was used in weighing silver; it was about half the commercial pfund. The Apothecaries' pfund was divided into 12 unzen; each unze into 8 drachmen, each drachme into 3 scruplen, each scruple into 20 gram. The ducat was used for gold weight, and was divided into 60 gram.

GERMAN EMPIRE.

Since the 1st January, 1872, the Metric System of Weights and Measures has been in use, and under this system the following are the legal Weights and Measures for all the States of the Empire:—

METRIC MEASURES OF LENGTH.

	Systematic name.	*Old Prussian value.*	*English value.*
10 Millimetres =	1 Millimetre or Strich*	= ·459 Linie	= ·03937 inch
10 Centimetres =	1 Centimetre or New Zoll	= ·3823 Zoll	= ·39370 ,,
10 Dezimetres =	1 Dezimetre	= 3·823 ,,	= 3·9370 ,,
,, =	1 Metre or Stab*	= 3·1862 Fuss	= 39·37079 ,,
	,,	= ·53103 Faden	= ,, ,,

METRIC MEASURES OF LENGTH—*continued.*

	Systematic name.	*Old Prussian value.*	*English value*
10 Metres	= {1 Dekametre or Kette*}	= 14·994 Ellen	= 10·93633 y
10 Dekametres	= 1 Hektometre	= 47·793 Lachter	= 109·3633 ,,
10 Hectometres	= 1 Kilometre	= ·13276 Meile	= 1093·63365 ,,
00 Meters	= 1 Mile	= ·99569 ,,	= 4·6604 mil

The relative value of the Meter or Stab and the Fuss (of the old system) in the several States of the German Empire is shown in the following table :—

Names of States.	Meter or Stab =	German Fuss. =	English value of the old German Fuss in different States.
	Fuss.	*Meter.*	*Inches.*
Baden	$3\frac{1}{3}$	0·30000	11·81123
Bavaria	3·42631	0·29186	11·4907
Brunswick	3·50432	0·28536	11·325
Bremen	3·45602	0·28935	11·39196
Frankfort	3·51358	0·28461	11·20536
Hamburg	3·48953	0·28657	11·282
Hanover	3·42355	0·29209	11·5
Hesse, Ducal	4·00000	0·25000	9·84984
Hesse, Electoral	3·47585	0·28770	11·32692
Lubeck	3·47683	0·28760	11·32380
Mecklenburg	3·43643	0·29100	
Nassau	$3\frac{1}{3}$	0·30000	11·81123
Oldenburg	0·37975	0·29588	11·649
Prussia	3·18620	0·31385	12·35664
Saxony	3·53120	0·28319	11·14944
Wurtemburg	3·49052	0·28649	11·27

* Under the old system the Stab (Staff, Rod, or Ell) was a measure of length which varied in different localities in Germany from 1·16975 English yards at Friburg to 1·31236 yards at Frankfort. The Zoll, or inch, corresponded nearly with the English inch, and the Strich, or Linie, was equal to ·0858 English inch.

METRIC MEASURES OF SURFACE.

	Systematic name.	*Old Prussian value.*	*English value.*
			Sq. Inches
100 Sq. Millimetres	= 1 Sq. Centimetre	= 0·14619 Sq. Zoll	= ·1550
100 Sq. Centimetres	= 1 Sq. Decimetre	= 14·619 ,,	= 15·5005
			Yards.
100 Sq. Decimetres	= 1 Quadrat-stab*	= 10·152 Sq. fuss	= 1·19603
100 Quadrat-stabs	= 1 Ar	= 7·0499 Sq. ruthen	= 119·603
			Poles.
,, ,,	= 1 Ar	= 22·842 Lachter	= 3·4538
			Acres.
100 Ars	= 1 Hektar	= 3·9166 Morgen	= 2·4711
100 Hektars	= 1 Sq Kilometre	= 391·66 ,,	= 247·11429
100 Sq. Kilometres	= 1 Sq. Myriametre	= 391·66 ,,	= 24711·4299

The Ar, Centiar, and Hektar are the units of land measurement.

10,000 Hektars = 1·7625 old Prussian square meile; a new metric square meile = ·99139 old Prussian square meile or 22031 Morgen.

NEW OR METRIC MEASURES OF CUBIC CAPACITY.

The Kubik Meter is the basis; it is equal to 32·3459 Prussian *Kubik-fuss*, or 35·3166 English cubic feet or ·2995 Klafter.

NEW OR METRIC MEASURES OF CAPACITY.

The *Liter*, or *Kanne*,† is the unit, it is the $\frac{1}{1000}$th part of the kubik-meter. It is equal to ·29111 old Prussian metze, or 1·76195 British Imperial pints, or ·2202443 British Imperial gallons.

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* Or *centiar*.

† The old German measure of capacity, called a kanne, (pot or can), varied considerably in different localities: the beer-kanne, varied from ·247 British Imperial Gallons at Dresden, to ·518 British Imperial Gallons at Hanover, but the new Metric Kanne, or Li'er, which is equal to ·22 British Imperial Gallons, is the same for the whole of the German Empire.

The *Schoppen*, or half liter, * is equal to ·48667 old Prussian Quarts, or ·110122 British Imperial Gallons.

The *Scheffel*, † is 50 liters, and is equal to 11·012215 British Imperial gallons, or 14·556 old Prussian metzen.

The *Hectoliter*, or *Foss*, ‡ of 100 liters is equal to ·34413 British Imperial Quarts, or 22·02443 British Imperial Gallons, or ·1213 old fuder, or ·72778 ohm, or 1·4556 eimer, or ·48519 oxhoft.

(*a*).—LIQUID MEASURES OF CAPACITY.

The liquid measures for public trading purposes have the capacity marked upon them; the unit, multiple, or part of the liter being followed by the word liter, or the letter L. The decimal parts of the liter are expressed by decimal fractions, and the binary parts by vulgar fractions.

The liquid measures are as follows: 20, 10, 5, and 2 liter or kannen, 1 liter or kanne, ¼ or ·5 liter or kanne = 1 schoppen, ·2 liter or kanne, ⅛ liter or kanne, ·1 liter or kanne, $\frac{1}{10}$ liter or kanne, ·05 litre or kanne, $\frac{1}{20}$ liter or kanne·02 litre or kanne. They are made of pewter or tin-plate, or else of brass or copper, well coated inside with pure tin.

(*b*).—DRY MEASURES OF CAPACITY.

The measures are 1 hectoliter, or 1 fass (cask), ½ hectoliter ·5 hectoliter, or 1 scheffel (bushel), ¼ hectoliter, or ½ scheffel, 2), 10, 5, 2, and 1 liter, ½ liter or ·5 liter, ¼ liter, or ·2 liter, ⅛ liter or ·1 liter, $\frac{1}{16}$ or ·05 liter. The name of the measure

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* The old German measure of capacity, called a *Schoppen*, was chiefly a beer measure, and was nearly equal to ·1 English Imperial gallon, and was not widely different from the new or metric Schoppen.

† The old dry measure called a *Scheffel*, (or bushel) varied considerably in different localities and according to the commodity measured. The Scheffel at Munster, was ·66 English bushels; the old legal Prussian Scheffel was equal to 1·56 English bushel, and the Scheffel for oats, at Brunswick, was 10·4 English bushels.

‡ The old Foss, (or cask), as a liquid measure, varied from 38 255 British Imperial gallons, the beer Foss at Lubec, to 100.173 British Imperial gallons, the wine Foss at Leipsic; and the new or metric Foss or Hectoliter is of the same capacity through the whole of the German Empire and is equal to 22·02443 British Imperial Gallons.

must be marked upon it: the larger measures are marked respectively, 1 H, ½ H or ·5 H, and ¼ H; or, instead of the letter H, the full word hectoliter may be used, and the German name, 1 fass, 1 scheffel, ½ scheffel, added. The dry measures are made of iron plate, or copper plate, or wood.

METRIC WEIGHTS.

The kilogramm is the unit of weight; it is the weight of a liter of distilled water at 4 degrees of the Centigrade thermometer, or 39 degrees on Fahrenheit's thermometer. The kilogramm is divided into 1.000 gramms, with decimal subdivisions of the gram.

Subdivisions.	*Systematic name.*	*Old Prussian value.*	*English value.*
			Troy grains.
$\frac{1}{1000}$ part of a gramm	= 1 Milligramm	= ·06 Korn	= ·01543
10 Milligrammen	= 1 Zentigramm	= ·6 ,,	= ·15432
10 Zentigrammen	= 1 Dezigramm	= 6 ,,	= 1·543234
10 Dezigrammen	= 1 Gramm	= 6 Cent	= 15·4323
10 Grammen	= {1 Dekagramm or New Loth}	= ·6 Loth*	= 154·32348
			lbs. Av.
1000 ,,	= 1 Kilogramm	= {60 ,, or 2 Pfund†}	= 2·20462
500 ,,	= 1 Pfund	=	= 1·1023
100 Pfund	= 1 Zentner	=	= 110·2322
			Cwt.
2000 ,,	= 1 Tonne	=	= 19·6844

The only legal Medicinal weights are the gramm and its subdivisions, namely, the dezigramm, Zentigramm and Milligramm.

The weights used are 50 kilogrammen, 100 pfund or 1 zentner, 50 pfund or ½ zentner, 20, 10, 5, 2, and 1 kilogramm,

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* The old German Loth was equal to about half an English ounce Avoirdupois.

† The old German Pfund varied in different localities: it was a little heavier than the English pound Avoirdupois; there was also an Apothecaries' Pfund. Previous to the establishment of the *Zoll Pfund* as a legal Commercial weight by the Law of the 17th May, 1856, the old legal Pfund was equal to 1·03118 lb. Avoirdupois; the present Metric Pfund is the same as the Zoll Pfund; that is, it is equal to 1·1025 lbs. Av. English.

500, 100, 50, and 20 grammen, 10 grammen or 1 dekagramm or 1 new loth, 5, 2, and 1 gramm, 5, 2, and 1 dezigramm, 5, 2, and 1 zentigramm, and 5, 2, and 1 milligramm.

Every legal weight has its denomination marked upon it. The weights down to 50 grammen are usually made of cast iron; the centigramm and milligramm weights are made of alluminium; but platinum, silver, brass, bronze, German silver, and metallic alloys, similar to those metals as regards hardness and liability to oxidation, are used for weights of all sizes.

The following table shows the marks used for the several denomination of weights:—

TABLE OF DENOMINATIONS to be marked on WEIGHTS.

Weights.	Principal marks, of which *one* is in each case requisite and sufficient.			Supplementary marks which may also be used.
	K.	G.		
50 kilogramm -	50	—	100 lb or Pf.	1 ctr. (cwt.)
50 pounds -	—	—	50 lb ,,	0·5 ctr.
20 kilogramm -	20	—	40 lb ,,	—
10 ,, -	10	—	20 lb ,,	0·2 ctr.
5 ,, -	5	—	10 lb ,,	0·1 ctr.
2 ,, -	2	—	4 lb ,,	—
1 ,, -	1	—	2 lb ,,	—
500 gramm -	0·5	500	1 lb ,,	—
½ pfund -	—	—	—	—
200 gramm	0·2	200	—	20 N. L.
100 ,, -	0·1	100	—	10 N. L.
50 ,, -	0·05	50	—	5 N. L.
20 ,, -	0·02	20	—	2 N. L.
10 ,, -	0·01	10	—	1 N. L.
5 ,, -	0·005	5	—	0·5 N. L.
2 ,, -	0·002	2	—	—
1 ,, -	0·001	1	—	—
5 decigramm -	—	0·5	5 D.	—
2 ,, -	—	0·2	2 D.	—
1 ,, -	—	0·1	1 D.	—
5 centigramm -	—	0·05	5 C.	—
2 ,, -	—	0·02	2 C.	—
1 ,, -	—	0·01	1 C.	—
5 milligramm -	—	—	5 M.	—
2 ,, -	—	—	2 M.	—
1 ,, -	—	—	1 M.	—

OLD GERMAN WEIGHTS AND MEASURES.

That is, Weights and Measures in use in the several States of the German Empire before the introduction of the Metric System.

I.—PRUSSIA.

OLD MEASURES OF LENGTH.

	Systematic Name.		*Metric value.*		*English value.*
12 Linien	= 1 Zoll	= 26·154	Millimetres	=	1·02972 Inch
12 Zoll	= 1 Fuss	= ·31385	Metre	=	1·02972 Foot
2½ Fuss	= 1 Elle	= ·66694	,,	=	2·18816 ,,
6⅔ Fuss	= 1 Lachter	= 2·00240	,,	=	6·86495 ,,
12 Fuss	= 1 Ruthe	= 3·766242	,,	=	4·11888 Yards
2000 Ruthen	= 1 Meile	= 7·532485	Kilometres	=	4·68054 Miles

100 Fuss = 31·385 Metres = 102·972 Feet
100 Ellen = 66·694 Metres = 73·939 Yards.

The Lachter was used in mining and was divided into 8 Achtels, each achtel into 10 Lachterzoll, each Lachterzoll into 10 Primes, and each Prime into 10 Seconds.

OLD MEASURES OF SURFACE.

	Systematic name.		*Metric value.*		*English value*
					Sq. Inches.
144 Quadrat Linien	= 1 Quadrat Zoll	=	6·8405 Sq. Centimetres	=	1·058
144 Quadrat Zoll	= 1 Quadrat Fuss	=	9·8504 Sq. Decimetres	=	152·467
					Sq. Yards.
144 Quadrat Fuss	= 1 Quadrat Ruthe	=	14·1846 Centiare	=	16·96
					Roods.
180 Quadrat Ruthen	= 1 Morgen	=	0·2553225 Hektar	=	2·52076
					Acres.
30 Morgen	= 1 Hufe	=	765·96 ,,	=	18·929
100 Morgen		=	25·53225 ,,	=	63.094

OLD CUBIC MEASURES.

The unit of the old system was the *Kubik-fuss* which was equal to ·03092 Kubik-meter or 1·09184 English cubic feet.

It was divided into 1728 Kubik Zoll. The Kubik Klafter, by which firewood, earth, &c., were measured, contained 108 Kubik-fuss, and was equal to 3·3389 Kubik-meter or 117·91872 English Cubic feet.

OLD PRUSSIAN MEASURES OF CAPACITY FOR DRY GOODS.

North German value.	*Systematic name.*	*English value.*	*Metric value.*
		Quarts.	Litres.
4 Mässchen or 3 Quarts	= 1 Metze =	3·084 =	3·435
		Gallons.	
4 Metzen	= 1 Viertel =	3·024 =	13·7403
		Bushels.	
4 Viertel or 48 Quarts	= 1 Scheffel =	1·5121 =	54·3615
		Quarters.	
4 Scheffeln	= 1 Tonne =	·7560 4 =	219·846
12 Scheffeln	= 1 Malter =	2·26815 =	659·538
5 Malters or 60 Scheffeln	= 1 Last =	11·3406 =	3297·690

100 Scheffeln were equal to 18·901 British Imperial Quarters.

The Tonne in the table was the measure for salt, lime, and carbon; a Tonne of Flax-seed was 37⅓ Metzen, or 3·5595 British Imperial Bushels, or 129·388 Litres.

The *Wispel* was a *measure* varying in quantity. In wholesale business and in railway freight it was usually reckoned as 24 *Scheffeln*. The *Wispel* of wheat or barley was 25 Scheffeln, of oats it was 26 Scheffeln.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

North German value.	*Systematic name.*	*English value.*	*Metric value*
		Pint.	Litres.
32 Cubic Zoll =	1 Ossel =	1·0079 =	·57251
		Quart.	
2 Ossel =	1 Quart =	1·0079 =	1·14503
		Gallons.	
60 Ossel =	1 Anker =	7·55925 =	34·35092
2 Ankers =	1 Eimer =	15·1185 =	68·70184
2 Eimers =	1 Ohm =	30·237 =	137·40389
3 Eimers or 1½ Ohm =	1 Oxhoft =	45·3555 =	206·10553
4 Oxhoft or 6 Ohm =	1 Fuder =	181·422 =	824·42214

The Fuder and its subdivisions were used for wine and spirits. The flasche for wine was ½ quart, and was equal to 1·512 British Imperial pint, or ·858 Litre.

OLD WEIGHTS.

From 1838 to 1872, the unit of weight was the Zollpfund equal to half a kilogramm. This pfund was divided into 30 loth, the loth into into 10 quentchen, the quentchen into 10 zent, and the zent into 10 korn. It was equal to 1·10232 lb. Avoirdupois English, or 500 French Grammes. The zoll-centner of 100 zollpfund was equal to 50 kilogrammes or 110·232 lbs. Avoirdupois English. Previous to the introduction of the zollpfund and its subdivisions, the unit of weight was the old Prussian pfund, which was defined to be the weight of the 66th part of a Prussian cubic foot of distilled water at a temperature of 15 degrees Reaumur. It was equal to 467·711 grammes or 7217·886 English Troy Grains.

The Centner of 100 pfunds, was equal to 46·771 kilogrammes, or 103·111 English lbs. Avoirdupois, the unit of the old Apothecaries' Weights, was the pfund, equal to ⅓th of the old Prussian pfund, used before 1858, it was divided into 12 unzen, each of 8 drachmen, each of 3 scruplen, each of 20 gram. It was equal to 350·78326 grammes, or 5413·4379 grains, or 11·27799 ounces, Troy English.

II.—SAXONY.

OLD MEASURES OF LENGTH.

Saxon value.	*Systematic name.*	*Metric value.*	*English value.*
		Metre.	Lines. Inches.
12 Linien =	1 Zoll =	·02359 =	11·149414 or ·92912
			Inches Feet
12 Zoll =	1 Fuss =	·28319 =	11·149414 ,, ·92912
2 Fuss =	1 Elle =	·56638 =	22·298828 ,, 1·85824
2 Ellen =	1 Stab =	1·13276 =	44·597656 ,, 3·71648

The *Ruthe* was the name of a Land Measure, and also of a *Road Measure*. In Land Measure it contained 15 Fuss, 2 Zoll; and was equal to 4·69721 English Yards, or 4·29504 Metres. In Road Measure it contained 16 Fuss, and was equal to

4·955306 yards English, or 4·53104 Metres. The Lachter used by miners was equal to 2 Metres, or 2·18726 English Yards.

The *Meile Post* formerly contained 2000 Ruthen, or 16000 Ellen, but from 1841 it consisted of 13241·987 Ellen, and was equal to 7500 French Metres, or 1·01072 Geographical Mile, or 4·660368 English Miles.

OLD MEASURES OF SURFACE.

The Square Fuss of 144 Square Zoll was equal to ·86326 English Square Foot, or 124·31001 Square Inches English or ·081196576 Square Mètres, and the Acker of 300 Square Ruthen was equal to 55·3423256 French Ares, or 1 Acre, 1 Rood, 18 Poles English statute measure.

OLD MEASURES OF CUBIC CAPACITY.

The Cubic Fuss of 1728 Cubic Zoll was equal to ·8020758238 English Cubic Foot, or ·0227108683 Cubic Mètre. In the measurement of firewood there was the Schragen of 3 Klafter. The Klafter contained 108 Cubic Fuss (i. e., 6 Fuss high, 6 Fuss broad, by 6 Fuss thick); and was equal to 86·62418898 English Cubic Feet, or 2·45277378 Cubic Mètres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Saxon value.	*Systematic name.*	*Metric value.*	*English value.*
		Litre.	Quart.
	1 Mäsche =	1·64285 =	1·446302
			Imperial Gallons.
4 Mäschen =	1 Metze =	6·5714 =	1·446302
4 Metzen =	1 Viertel =	26·2857 =	5·785208
			Imperial Bushels.
4 Viertel =	1 Scheffel =	105·1429 =	2·892704
12 Scheffel =	1 Malter =	1261·7148 =	34·712448
2 Malter =	1 Wispel =	2523·4296 =	69·424896

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Saxon value.	*Systematic name.*	*Metric value.*	*English value.*
		Litres.	Gill.*
	1 Quartier	= ·11695	= ·84368
4 Quartier	= 1 Nossel	= ·46779	= 3·37472
			Imperial Pints.
2 Nossel	= 1 Kanne	= ·93559	= 1·64736
36 Kannen	= 1 Anker	= 33·68124	= 7·42368
72 Kannen, or 2 Anker	= 1 Eimer	= 67·36284	Imperial Gallons. = 14·82624
3 Eimer	= 1 Oxhoft	= 202·08744	= 7·41312
6 Eimer	= 1 Fass or Barrel	= 404·17488	= 88·93744

The above were the old Dresden standards of liquid measures.

In Leipsic there were two Kannen of different sizes, namely, the publicans' Kanne, called *Schenk-Kanne*, and the excise Kanne, called *Visir-Kanne*. The Visir-Kanne = 2·47283, and the Schenk-Kanne = 2·11997 British Imperial Pints, or 1·4044 and 1·204 litre respectively. The Leipsic Eimer contained 54 Visir-Kannen, or 63 Schenck-Kannen. The Fuder was 12 Eimer. The Kanne, which went under the name of the "Dresden Kanne" in Leipsic, was a little smaller than the real Dresden Kanne, and was equal to 1·644439 British Imperial Pint, or ·93393 litre. A Leipsic Eimer of 63 Schenk-Kannen contained 81 Dresden Kannen of the Leipsic standard, and was equal to 16·69476 British Imperial Gallons, or 75·852 litres. Nine Dresden Eimer were commonly reckoned equal to 8 Leipsic Eimer. In beer measure the Gebräude of 8 Kufe, each of 2 Fuss, each of 2 Viertel, each of 2 Tonne, each of 75 Kannen (Schenk-Kannen), each of 2 Nössel. The beer Eimer was 72 Schenk-Kannen, and was equal to 19·07974 British Imperial Gallons, or 86·688 litres. The Tonne = 19·874729 British Imperial Gallons, or 90·300 litres. The Viertel = 39·749459 British Imperial Gallons, or 180·6 litres. The Fass = 79·498918 British Imperial Gallons, or 361·2 litres. The Kufe = 158·99783 British Imperial Gallons, or 722·4 litres. The Gebräude = 1271·98269 British Imperial Gallons, or 5779·2 litres.

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* A little less than 1 Gill.

III.—HANOVER.

OLD MEASURES OF LENGTH.

Hanoverian value.	*Systematic name.*	*Metric value.*	*English value.*
		Metres.	Lines.
12 Linien	= 1 Zoll	= ·0243412	= 11¼
			Inches,
12 Zoll	= 1 Fuss*	= ·2920947	= 11¼
2 Fuss	= 1 Elle	= ·5841894	= 23
3 Ellen or 6 Fuss	= 1 Klafter	= 1·7525682	= 5¾ Ft.
6 Fuss	= 1 Ruthe	= 4·6735152	= 5 yds. 4in.
			Miles.
1587½ Ruthen†	= 1 Meile	= 7419·20538	= 4·61016

In thread and yarn measurement the unit was the *Stück* or *Lop* of 10 Gibenden (Skeins) or 90 Faden (threads); but sometimes these were only 82 or 87 Faden to the Stück. 20 Lop = 1 Bund. The length of the Faden was 3¾ Ellen.

OLD MEASURES OF SURFACE.

Hanoverian value.	*Systematic name.*	*Metric value*	*English value.*
		Sq. Meters.	Sq. Inch.
144 Sq. Linien	= 1 Sq. Zoll	= ·0006	= ·9184
			Sq. Feet.
144 Sq. Zoll	= 1 Sq. Fuss	= ·085319	= ·9184
			Square Yards.
256 Sq. Fuss	= 1 Sq. Ruthe	= 21·84174	= 26·12327
120 Sq. Ruthen	= 1 Morgen	= 2621·00931‡	= 3134·79300

MEASURES OF CAPACITY FOR DRY GOODS.

The Cubic Fuss of 1728 Cubic Zoll, the Zoll being subdivided into 1728 Cubic Linien. The Cubic Fuss was equal to 1520·875 Cubic Inches English, or ·024921319 of a French Cubic Metre.

The *Klafter* of 144 Cubic Fuss for wood was equal to 3·58867 French Steres.

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* 24 Hanoverian feet are equal to 23 English feet.

† 12700 Ellen, or 25400 Fuss.

‡ 26·21009 French Ares.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Hanoverian value.		*Systematic name.*	*Metric value*	*English value.*
			Litres.	Bushels.
4 Sechzehntel	= 1	Spint =	7·788 =	·21426
4 Spint or Metzen	= 1	Himten =	31·152 =	·85704
6 Himten	= 1	Malter =	186·912 =	5·14224
				Quarters.
8 Malter	= 1	Wispel =	1495·296 =	5·14224
16 Malter or 2 Wispel	= 1	Last =	2990·592 =	10·28448

The Vierup is $1\frac{3}{5}$ Himten, or 2 Hanoverian Cubic Fuss, and equals 49·843 Litres, or 1·371265 British Imperial Bushels.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Hanoverian value		*Systematic value.*	*Metric value*	*English value.*
			Litres	Imperial Pints
2 Nossel	= 1	Quartier =	·973489 =	1·714092
				Imperial Quarts
2 Quartier	= 1	Kanne =	1·946976 =	1·714092
2 Kannen	= 1	Stubchen =	3·893956 =	3·428184
				Imperial Gallons
2 Stubchen	= 1	Viertel =	7·787912 =	1·714092
5 Viertel	= 1	Anker =	38·939560 =	8·57046
8 Viertel	= 1	Eimer =	62·303296 =	13·712736
4 Anker	= 1	Ohm =	155·758240 =	34·28184
$1\frac{1}{2}$ Ohm	= 1	Oxhoft =	233·63736 =	51·422276
4 Oxhoft	= 1	Fuder =	934·54944 =	205·69104

IV.—HESSE-ELECTORATE, or, HESSE CASSEL.

OLD MEASURES OF LENGTH.

Cassel value.		*Systematic Name*	*Metric value.*	*English value*
12 Linien	= 1	Zoll =	·023975 Metre =	·94391 inch
12 Zoll	= 1	Fuss =	·287699 ,, =	·94391 foot
2 Fuss	= 1	Elle =	·575398 ,, =	1·88782 ,,

The Brabant Elle was also used. It was equal to 2·27796 English Feet, or ·69431 Mètre. The Ruthe of 14 *Old** Cassel Fuss = 4·362239 English Yards, or 3·98876 Mètres. It was only used in land measure.

OLD MEASURES OF SURFACE.

The Square Ruthe = 19·029139 English Square Yards, or 15·9102 Square Metres. The Acker of 150 Square Ruthen = 2854·36936 English Square Yards. or ·58974 Acre, or 23·865 Ares.

CUBIC MEASURES.

1728 Cubic Zoll = 1 Cubic Fuss = ·8409918 English Cubic Foot. The Klafter of (5 × 5 × 6 Fuss) = 150 Cubic Fuss = 126·14877 English Cubic Fuss, or 3·572 Steres.

MEASURES OF CAPACITY FOR DRY GOODS.

Cassel value.	*Systematic name.*	*Metric value.*	*English value.*
4 Mäaschen	= 1 Metzen =	10·04612 litres. =	·034548 qrs.
4 Metzen	= 1 Himten =	40·1845 ,, =	·138195 ,,
8 Metzen	= 1 Scheffel =	80·3691 ,, =	·27639 ,,
2 Scheffel	= 1 Viertel =	160·7382 ,, =	·55278 ,,
4 Viertel	= 1 Malter =	642·9528 ,, =	2·21112 ,,

MEASURES OF CAPACITY FOR LIQUIDS.

Cassel value.	*Systematic name.*	*English value.*	*Metric value.*
		Pint.	Litres.
	1 Schoppe =	·85816 =	·487375
		Gallons.	
4 Schoppen	= 1 Maass =	·42908 =	1·94950
4 Maass	= 1 Viertel =	1 71632 =	7·7980
20 Viertel	= 1 Ohm =	34·3264 =	155·96
6 Ohm	= 1 Fuder =	205·9584 =	935·76

The measures in the table were used for Wine, Brandy, and Vinegar. The Beer Ohm, also divided into 20 Viertel each of 4 Maass, each of 4 Schoppen, was equal to 38·172673 British Imperial Gallons, or 174·755 Litres, and the Viertel, Maass, and Schoppe, in proportion. 8 Beer Ohm were equal to 8·964 Wine Ohm, but in round numbers 8 Beer Ohm were usually reckoned equal to 9 Wine Ohm.

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1 Cassel Fuss = 1·0098 Old Cassel Fuss.

WEIGHTS.

The Pfund of 500 Grammes, had begun to be generally used, but the former system was still common, viz: In wholesale trade the (*Schwere*) heavy Pfund of 32 Loth, each of 4 Quentchen = 1·06755 lbs. av. English, or 484·2425 French Grammes. In retail trade the (*Leichte*) light Pfund, with the same divisions = 1·03136 lbs. av. English, or 467·812 French Grammes. 57 *Schwere* Pfund are equal to 59 *Leichte* Pfund. The Centner = 108 Pfund, heavy or light.

V.—SAXE-ALTENBURG.

OLD MEASURES OF LENGTH.

Fuss of 12 Zoll = 11·1222 English Inches, or ·2325 Mètre. Elle of 2 Fuss = 1·8537 English foot, or ·5650 Metre. The Surveyor's Fuss was exactly equal to the Elle. It was divided into 10 Zoll of 10 Linien. The Meile was 13242 Ellen. = 8182·2318 English Yards or 4·648995 English Miles, or 7·48173 Kilometres.

OLD MEASURES OF SURFACE.

Acker of 200 Square Ruthen = 64·431 Ares, or 7706·24398 English Square Yards, or 1·592199 English Acre. The Hufe was 12 Acker.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Malter of 2 Scheffel, each of 4 Viertel, each of 4 Metzen, each of 4 Mäschen = 1·010 British Imperial Quarter, or 293·9436 Litres. Scheffel = 4·040, and Viertel = 1·010, British Imperial Bushels, or 146·9718, and 36·74295 Litres respectively. Metzen = 4·040, and Mäschen = 1·010 British Imperial Gallon, or 9·18573 and 2·29643 Litres respectively. A Sack was 3 Viertel.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Eimer of 60 Kannen, each of 2 Nössel. In Beer Measure the Tonne is 1½ Eimer. A Tonne = 2 Metzen, and 128½ Kannen = 1 Scheffel, but it was the custom to reckon only 126 Kannen to the Scheffel.

OLD WEIGHTS.

The old weights were the same as those of Prussia.

VI.—SAXE-COBURG-GOTHA.

OLD MEASURES OF LENGTH.

Gotha value.	*Systematic Name.*	*Metric value.*	*English value.*
12 Linien	= 1 Zoll =	·02396 mètre	= ·94365 inches
12 Zoll	= 1 Fuss =	·28762 „	= 11·3238 „

An Elle was equal to ·61532 English Yard, or ·562641 Metre. A Ruthe, Land Measure, was 14 Fuss. A Ruthe, Forest Measure was 16 Fuss.

OLD MEASURES OF SURFACE.

An Acker, Land Measure, was 140 Square Ruthen, Land Measure, and was equal to **2714**·9603166 English Square Yards, or ·560942 English Acre, or **2269**·6655744 Square Mètres. An Acker, Forest Measure, was 160 Square Ruthen, Forest Measure, and was equal to **4052**·6521344 English Square Yards, or ·837324 English Acre, or **3387**·9556096 Square Mètre. The Hufe was 30 Acker.

OLD CUBIC MEASURES.

The Klafter for Wood = (6 × 6 × 3) = 108 Cubic Fuss = ·840297 English Cubic Foot, or **2**·4389 Cubic Mètres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Gotha value.	*Systematic name.*	*English value.*	*Metric value.* Litres.
4 Nössel	= 1 Mässchen =	**2**·42736 Quarts	= **2**·75725
4 Mässchen	= 1 Metzen =	**2**·42736 Gallons	= **11**·02900
4 Metzen	= 1 Viertel =	·15171 Quarter	= **44**·116
2 Viertel	= 1 Scheffel =	·30342 „	= **88**·232
2 Scheffel	= 1 Malter =	·60684 „	= **176**·464

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Gotha value.	*Systematic name.*	*English value.*	*Metric value.*
		Pint.	Litres.
1	Nössel =	·80071 =	·45475
2 Nössel	= 1 Maass =	1·60142 =	·9095
		Quart	
2 Maass	= 1 Kanne =	1·60142 =	1·819
		Gallons	
0 Kannen	= 1 Anker =	8·0071165 =	36·38
2 Anker	= 1 Eimer =	16·014233 =	72·76
12 Eimer or 3 Anker	= 1 Feuillette =	24·0163993 =	109·14
22 Eimer	= 1 Ohm =	32·028466 =	145·52
8 Eimer or 1½ Ohm	= 1 Oxhoft =	48·042699 =	218·28
2 Oxhoft	= 1 Pipe or Both =	96·085398 =	436·56
3 Oxhoft	= 1 Muid =	144·128097 =	654·84

The Fass (of Brandy) was 110 Kannen, and was equal to 44·03918 British Imperial Gallons, or 200·090 Litres. The Gotha Kanne was exactly 132½ Gotha Cubic Fuss.

OLD COMMERCIAL WEIGHTS.

Gotha value.	*Systematic name.*	*English value.*	*Metric value.*
		Oz. Av.	Grammes.
4 Quentchen	= 1 Loth =	·515572 =	14·615978
		lb. av.	
32 Loth	= 1 Pfund =	1·031144 =	467·7113
			Kilogrammes
110 Pfund	= 1 Centner =	113·425873 =	51·42824

VII.—BRUNSWICK.

OLD MEASURES OF LENGTH.

Brunswick value.	*Systematic name.*	*English value.*	*Metric value.*
		Lines	Metres
12 Linien	= 1 Zoll =	11·235 =	·02378
		Inches	
12 Zoll	= 1 Fuss =	11·235 =	·28536
2 Fuss	= 1 Elle =	22·407 =	·57072
16 Fuss	= 1 Ruthe =	179·76 =	4·565798
		Miles	Kilometers
1625 Ruthen	= 1 Meile =	4·61302 =	7·41942175

The Lachter used by Miners contained 80 Zoll, 8½ Linien, and was equal to 6·296895 Feet English, or 1·919259 Mètre.

OLD MEASURES OF SURFACE.

In Surface Measure the Square Ruthe of 256 Square Fuss, was equal to **24**·93338 English Square Yards. The Morgen, in Arable Land, was 120, or in Forest Land 160 Square Ruthen. The former = **2992**·00657 English Square Yards, or ·618181 Acre, and the latter = **3989**·3422 English Square Yards, or ·82424 English Acre.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Brunswick value.	*Systematic name.*	*English value.* Imperial Pint	*Metric value* Litres
2 Nossel	= 1 Quartier =	1·64800 =	·936843
		Imperial Quarts	
4 Quartier	= 1 Stubchen =	3·296 =	3·77372
		Imperial Gallons	
10 Stubchen	= 1 Anker =	8·24 =	37·437372
4 Anker	= 1 Ohm =	32·96 =	149·89488
1½ Ohm, or 6 Anker	= 1 Oxhoft =	197·76 =	224·84232

A Tonne of 108 Quartiers, was equal to **22**·248 British Imperial Gallons.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Brunswick value.	*Systematic name.*	*English value.* Imperial Gallons	*Metric value.*
4 Metzen =	1 Vierfass =	1·71376 =	7·7863
4 Vierfass =	1 Himten =	6·85504 =	31·145
		Imperial Quarters	
10 Himten =	1 Scheffel =	1·0711 =	311·45
4 Scheffeln =	1 Wispel =	4·2844 =	1245·8

OLD WEIGHTS.

Before the introduction of the Metric System the weights were chiefly the Zollpfund with its decimal subdivisions and multiples introduced 1st July, 1858, but the old weights in use prior to 1858 were also used, viz.

Brunswick value.	*Systematic name.*	*English value.* Troy Grains	*Metric value.* Grammes
2 Heller =	1 Pfennig =	14·1 =	·91349
4 Pfennig =	1 Quentche =	56·3 =	3·65399
4 Quentchen =	1 Loth =	225·2 =	14 61596
		lbs. av.	
16 Loth =	1 Mark =	·515 =	233·8555
2 Mark =	1 Pfund =	1·03111 =	467·711
			Kilogrammes
100 Pfund =	1 Centner =	103·111 =	46·7711
4 Centner =	1 Schifflast =	412·444 =	187·0844

VIII.—OLDENBURG.

OLD MEASURES OF LENGTH.

Oldenburg value.	*Systematic name.*	*English value.*	*Metric value.*
12 Linien =	1 Zoll =	11·649 Lines =	·024656 Metres.
12 Zoll =	1 Fuss =	11·649 Inches =	·295879 ,,
18 Fuss =	1 New Ruthe =	17·4735 Feet =	5·32582 ,,
20 Fuss =	1 Old Ruthe =	19·415 ,, =	5·01758 ,,

The Elle was equal to ·63529 English Yard, or ·5809 Mètre. An Oldenburg Meile contained 33357 Oldenburg Fuss, or 1667 Old Ruthen, 17 Fuss, and was equal to 6·1328 English Miles, or 9·8693558 Kilomètres. The Geographical or German Meile of 25079 Oldenburg Fuss was equal to 4·610878 English Miles, or 7·42034944 Kilomètres.

OLD MEASURES OF SURFACE.

Oldenburg value.	*Systematic name.*	*English value.*	*Metric value.*
		Sq. Yds.	Sq. Metres.
	1 Sqr. Fuss =	·104706 =	·0875449
324 Fuss	= 1 Sq. Ruthe =	33·92479 =	28·3645717
		Acres	Ares
160 Sq. Ruthen	= 1 Jück =	5427·96692 or Acre 1·1214807 =	45·38331472
		Sq. Yd.	Sq. Metres.
400 Sq. Fuss	= 1 Old Sq. Ruthe =	41·892460815 =	35·017989
		Acres	Ares
350 Old Sq. Ruthen	= 1 Morgen =	14658·86128544 Acre or 3·02869 =	122·562964

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Oldenburg value.	*Systematic name.*	*English value*	*Metric value.*
		Imperial Quarts	Litres
4 Ort =	1 Kanne =	1·25472 =	1·42518
		Imperial Gallons	
16 Kannen =	1 Scheffel =	5·01888 =	22·803
8 Scheffel =	1 Tonne =	·62736 =	182·424
		Imperial Quarters.	
1½ Tonne =	1 Malter =	·94104 =	273·636
12 Malters =	1 Last =	11·29248 =	3283·632

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Oldenburg value.		*Systematic name.*		*English value.* Gallons.		*Metric value* Litres.
4 Ort	=	1 Kanne	=	·30224	=	1·373
26 Kanne	=	1 Anker	=	7·86084	=	35·698
6 Anker	=	1 Oxhoft	=	47·16504	=	214·188

The Anker was also divided into 40 Quartier; the Quartier = ·19652 British Imperial Gallons, or 1·57216 British Imperial Pints, or ·88985 Litre. For Beer Measure, there was the Tonne of 4 Henkeman, each of 28 Bier Kannen = 159·61 Litres. The Bier-Kanne was larger than the Wine-Kanne, and was equal to 1·425 Litre, or ·313638 British Imperial Gallon, or 1·25455 British Imperial Quarts.

OLD WEIGHTS.

The old weights were the Zoll-Pfund of 500 Gramms with decimal sub-divisions.

IX.—ANHALT.

The Weights and Measures were the same as those of Prussia.

X.—SCHWARZBURG-SONDERHAUSEN.

(1.) High Sovereignty and Arnstadt.

OLD MEASURES OF LENGTH.

The Fuss and Elle were those of Leipsic (see Saxony). The Ruthe, in Land Measure, was 14, and in Road Measure, 16 Fuss: but sometimes this latter Ruthe was also used in Land Measure.

OLD MEASURES OF SURFACE.

The Acker of 160 Square Ruthen, each of 196 Square Fuss = 2993·43129074 English Square Yards, or ·618545 English Acre: or 25·027 Ares: but when the Ruthe of 16 Fuss was used, then the Square Ruthe was 256 Square Fuss: and the Acker of 160 of such Square Ruthen = ·807895 English Acre, or 32·688 Ares.

OLD CUBIC MEASURE.

The Klafter (Firewood) of 126 Cubic Fuss = 100·47211 English Cubic Feet, or 2·84 Steres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Maass of 4 Viertel = 32·8016675 British Imperial Gallons, or 149·033 Litres.

OLD WEIGHTS AND MEASURES OF CAPACITY FOR LIQUIDS.

Same as Leipsic. (see Saxony).

(2.)—Low Sovereignty and Sondershausen.

OLD MEASURES OF LENGTH.

The Fuss of 12 Zoll each of 12 Linien = 11·33091 English Inches, or ·2878 Mètre. The Surveyor's Fuss = 11·12303 English Inches, or ·28252 Mètre. The Ruthe of 14 Fuss = 12·976874 English Feet, or 3·95528 Mètre. The Elle was said to be exactly the Leipsic Elle, (see Saxony), but it was only equal to 1·84288 English Foot, or ·5617 mètre.

OLD MEASURES OF SURFACE.

The Acker of 120 Square Ruthen = 2245·323693 English Square Yards, or ·463909 Acre, or 18·773 Ares.

OLD CUBIC MEASURES.

The Malter of 64 Cubic Fuss = 53·87994624 English Cubic Feet, or 1·523 Stere.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Scheffel, each of 4 Metzen = 10·002293 British Imperial Gallons, or ·156285 Quarter, or 45·445 Litres. The Metzen = 2·500573 British Imperial Gallons, or 1·250286 Peck, or 11·36125 Litre.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Kanne of 2 Maass, each of 2 Nössel = (for Brandy), 1·746687 British Imperial Quart, or 1·984 Litre. The Maass = 1·746687, and the Nössel ·8733436 British Imperial Pint, or ·992 and ·496 Litre respectively. The Beer Nössel = ·7941087 British Imperial Pint, or ·451 Litre.

OLD WEIGHTS.

The Pfund of 32 Loth, each of 4 Quentchen = 1·030056 lbs. Av. English, or 467·218 Grammes; the Loth = ·515028 oz. Av. English, or 14·60056 Grammes; the Quentchen = 2·060113 English Drachms Av., or 3·65014 Grammes. The Gold and Silver Weight was the Mark which is exactly half the Pfund.

XI.—SCHWARZBURG-RUDOLSTADT.

(1.) High Sovereignty.

OLD MEASURES OF LENGTH.

The Fuss of 12 Zoll each of 12 Linien = 15·047515 English Inches or ·3822 Metre. The Ruthe of 16 Fuss = 6·68778486 English Yards, or 6·1152 Metres. The Elle was the same as that of Leipsic (see Saxony). The Lachter was 7½ Fuss = 3·0652347 English Yards, or 2·8028 Mètres.

OLD MEASURES OF SURFACE.

The Acker of 160 Square Ruthen, or 40960 Square Fuss = 3901·3824474 English Square Yards, or ·80607 Acre, or 32·619 Ares.

OLD CUBIC MEASURES.

The Klafter was sometimes (6 × 6 × 3 Fuss) 108, or sometimes (6 × 6 × 3½ Fuss) 126 Cubic Fuss. The Klafter of 108 Cubic Fuss = 212·948 English Cubic Feet, or 2·427 Cubic Mètres. The Klafter of 126 Cubic Fuss = 248·439 English Cubic Fuss, or 2·832 Cubic Mètres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Schaffel of 8 Achtel, each of 2 Metzen, eachof 24 Nössel = 5·152269 British Imperial Bushels, or 187·27296 Litres. The Achtel = 5·152269 British Imperial Gallons, or 23·40912

Litres. The Metzen = 2·5761347 British Imperial Gallons, or 11·70456 Litres. The Nössel (37½ Cubic Zoll) = ·85871157 British Imperial Pint, or ·48769 Litre.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Eimer of 72 Maass each, of 2 Nössel = 13·2433048 British Imperial Gallons, or 60·1704 Litres. The Maass = 1·471478 British Imperial Pint, or ·8557 Litre. The Nössel (32·13 Cubic Zoll) = ·735739 British Imperial Pint, or ·41785 Litre.

OLD WEIGHTS.

The Weights were the same as those of Schwarzburg-Sonderhausen.

(2.) Low Sovereignty and Frankenhausen.

OLD MEASURES OF LENGTH.

The Fuss of 12 Zoll, each of 12 Linien, was the same as that of Prussia. The Elle was that of Leipsic.

OLD MEASURES OF SURFACE.

The Acker 160 Square Ruthen, or 40960 Square Fuss = 3909·874374 English Square Yards, or ·80782 English Acre, or 32·69 Ares.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Scheffel of 4 Viertel, each of 2 Metzen, each of 2 Mäschen.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Eimer (Wine, Brandy, Vinegar), of 72 Maass, each of 2 Nössel. The Kanne is 2 Maass, or 4 Nössel. The Fass of 34 Stubchen, each of 4 Maass, is also used for Brandy. Beer is sold by the Ohm Kanne of 8 Maass.

OLD WEIGHTS.

The Weights were the same as those of Prussia, (which see)

XII.—WALDECK.

OLD MEASURES OF LENGTH.

The Fuss of 12 Zoll, each of 12 Linien = 11·5120189 English Inches, or ·2924 Metre. The Rhein Fuss was also used, it was equal to 12·356522 English Inches, or ·31385 Metre. The Elle of 2 Fuss = 1·9186698 English Feet, or ·5848 Mètre.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Mütte of 4 Scheffel = 45·26596 British Imperial Gallons, or 205·664 Litres. The Scheffel (for Wheat, Barley, Rye, Peas,) = 11·31649 British Imperial Gallons, or 51·416 Litres. The Oats-Scheffel = 12·465835 British Imperial Gallons, or 56·638 Litres.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Ohm of 16⅔ Eimer, each of 6 Maass* = 31·4342069 British Imperial Gallons, or 142·82 Litres. The Eimer = 1·8860524 British Imperial Gallons, or 8·5692 Litres. The Maass = 2·5147365 British Imperial Pints, or 1·4282 Litres.

OLD WEIGHTS.

The Weights were the same as those of Prussia. Formerly two systems of Commercial Weights were in use, namely, Heavy (*Schwere*) Weight, and Light (*Leighte*) Weight; the Pfund being in each system divided into 32 Loth, each of 4 Quentchen. The *Schwere* Pfund = 1·050194 lbs. Av. English, or 476·352 Grammes. The *Leighte* Pfund = 1·030480 lbs. Av. English, or 476·41 Grammes. The Pfund of 34 Loth (for Butter and Meat) = 1·09559 lbs. Av. English, or 496·943 Grammes.

XIII.—REUSS.

OLD MEASURES OF LENGTH.

The Fuss of 12 Zoll, each of 12 Linien, = 11·27973 English Inches, or ·2865 Mètre. The Leipsic Fuss was also used. The Elle was 2 Fuss = 22·55946 English Inches, or ·5730 Mètre.

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* The Ohm is therefore 100 Maass.

It was divided into ½, ¼, ⅛ Elle. The Ruthe of 16 Fuss = 5·0132139 English Yards, or 4·584 Metres. The Leipsic Ruthe of 16 Leipsic Fuss was also used.

OLD MEASURES OF SURFACE.

The Scheffel of 120 Square Ruthen, or 30720 Square Fuss, = 3015·8776 English Square Yards, or ·62311 Acre, or 25·2156672 Ares.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Scheffel of 4 Viertel, each of 4 Maass = 2 92068286 British Imperial Bushels, or 106·16 Litres. The Viertel = 5·8413657 British Imperial Gallons, or 26·54 Litres. The Maass = 1·46034143 British Imperial Gallons, or 6·135 Litres.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Eimer of 72 Kannen = 14·6025339 British Imperial Gallons, or 66·346 Litres. The Kanne = 1·6225037 British Imperial Pint, or· 9214 Litres. The Fass (Beer) of 6 Eimer = 87·6152034 British Imperial Gallons, or 398·076 Litres.

OLD WEIGHTS.

The weights were the same as those of Prussia.

XIV.—SCHAUMBURG-LIPPE (or LIPPE BUCKEBURG.)

MEASURES OF LENGTH.

The Fuss of 12 Zoll, each of 12 Linien, = 11·421466 English Inches, or ·2901 Metre. The Elle of 2 Fuss = 22·842932 English Inches, or ·5802 Metre. The Lachter of 7 Fuss = 2·2208408 English Yards, or 2·0307 Metres. The Ruthe of 16 Fuss = 5·0762076 English Yards, or 4·6416 Metres. The Faden is 2 Ellen. Yarn is measured by the Stück of 20 Bind, each of 66 Faden. The Great Stück is double the Stück, and contains 5280 Ellen, the Stuck contains 2640 Ellen.

MEASURES OF SURFACE.

The Morgen of 120 Square Ruthen = 3092·0980744 English Square Yards or ·636797 Acre, or 25·8533406 Ares.

The Square Ruthe = 25·7674839 English Square Yards, or 21·54445 Square Metres.

CUBIC MEASURE.

The Klafter of 216 Cubic Fuss = 195·67119 English Cubic Feet, or 5·27347 Cubic Mètres.

MEASURES OF CAPACITY FOR DRY GOODS.

The Fuder of 12 Malter, each of 6 Himten, each of 4 Metzen = 8·1634874 British Imperial Quarters, or 23·737896 Hectolitres. The Malter = 5·4423249 British Imperial Bushels, or 1·978158 Hectolitres. The Himten = 7·256433 British Imperial Gallons, or 32·9693 Litres. The Metzen = 1·814108 British Imperial Gallon, or 8·2423 Litres.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Oxhoft (Wine) of 6 Anker, each of 28 Maass, each of 4 Ort = 45·136897 British Imperial Gallons, or 2·050776 Hectolitres. The Anker = 7·522816 British Imperial Gallons, or 34·1796 Litres. The Maass = 1·074688 British Imperial Quart, or 1·2207 Litre. The Ort = ·53734 British Imperial Pint, or ·305175 Litre. The Dreiling (Brandy) of 108 Maass = 29·016576 Gallons, or 131·8356 Litres. The Dreiling* (Beer) = 168 Maass = 45·136897 British Imperial Gallons, or 2·050776 Hectolitres.

OLD WEIGHTS.

The weights were the same as those of Prussia (see Prussia), but the Centner is 108 Pfund.

XV.—LIPPE.

OLD MEASURES OF LENGTH.

The Fuss of 12 Zoll, each of 12 Linien = 11·39835 English Inches, or ·289513 Mètre. The Elle of 2 Fuss = 22·7967 English Inches, or ·579026 Mètre. The Ruthe of 16 Fuss = 5·065935 English Yards, or 4·632208 Mètres.

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* The Beer Dreiling contained the same quantity as the Wine Oxhoft.

OLD MEASURES OF SURFACE.

The Morgen of 120 Square Ruthen = 3079·60113 English Square Yards, or ·636281 English Acre, or 25·7488 Ares. The Scheffel of 80 Square Ruthen = 2053·067428 English Square Yards, or ·424187 Acre, or 17·1658 Ares.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Rye-Scheffel of 6 large, or 8 small Metzen, or 24 Meal-Metzen. The Oats-Scheffel of 7 large Rye-Metzen = 1·21855698 British Imperial Bushel, or 44·2917 Litres. 7 Rye-Scheffel = 6 Oats-Scheffel.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Kanne of 4 Ort = 1·2116057 British Imperial Quarts, or 1·37622 Litre. The Ort = ·6058028 British Imperial Pint, or ·34405 Litre. The Oxhoft of 1½ Ohm, or 6 Anker, or 162 Kannen = 49·07003 British Imperial Gallons, or 2·2294764 Hectolitres. The Anker was 27 Kannen, and = 8·17833 British Imperial Gallons, or 37·15794 Litres. The Ohm was 4 Anker, and = 32·71332 British Imperial Gallons, or 1·4863176 Hectolitres. The Beer Ohm = 100 Kannen = 121·16057 British Imperial Quarts, or 137·622 Litres.

OLD WEIGHTS.

The Zoll Pfund and its sub-divisions as in Prussia; also the Pfund of 32 Loth, each of 4 Quentchen was used; it was equal to 1·0304801 lb. av. English, or 467·41 Grammes. The Centner of 108 Pfund = 111·2918508 lbs. av. English, or 50·48028 Kilogrammes.

SOUTH GERMAN STATES.

XVI.—BADEN.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
10 Punkte	= 1 Linie	= ·118	= ·003
10 Linien	= 1 Zoll	= 1·181	= ·03
10 Zoll	= 1 Fuss	= 11·811	= ·3
		Feet.	
2 Fuss	= 1 Elle	= 1·96853	= ·6
10 Fuss	= 1 Ruthe	= 9·84269	= 3

The Elle was divided into ½, ¼, ⅛, $\frac{1}{16}$ Elle. The Klafter of 6 Fuss = 5·905618 English Feet, or 1·8 Metre. For Itinerary measures the Stunde of 14814·8148 Fuss = 4860·5911 Yards English, or 4444·4 Metres, and the Meile of 2 Stunden = 5·5234 Miles English.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.* Sq. Yards.	*Metric value.* Sq. Metres.
100 Sq. Zoll	= 1 Sq. Fuss =	·1076429824 =	·09
100 Sq. Fuss	= 1 Sq. Ruthe =	10·76429824 =	9
100 Sq. Ruthen	= 1 Viertel =	1076·429824 =	900
4 Viertel	= 1 Morgen =	4305·719296 =	3600

For Land Measure the Square Ruthe was also divided into 10 Feldschuhe, each of 10 Theile (Feld Zoll).

OLD CUBIC MEASURES.

The Klafter of (6 × 6 × 4 Fuss) 144 Cubic Fuss = 137·31507 English Cubic Feet, or 3·888 Cubic Mètres. The Cubic Fuss = ·9535768 English Cubic Fuss, or ·009 Cubic Metre.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.* Gill.	*Metric value.* Litres.
	1 Glass =	1·05632 =	·15
		Quart.	
10 Glass	= 1 Maass =	1·3204 =	1·5
		Gallons.	
10 Maass	= 1 Stutze =	3·3014 =	15
10 Stutzen	= 1 Ohm =	33·014 =	150
10 Ohm	= 1 Fuder =	330·140 =	1500

The Maass is also divided into 2 Half-Maass, each of 2 Quarter Maass or Schoppen, each of 2 Half-Schoppen.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value* Bushels.	*Metric value.* Litres.
10 Becher	= 1 Mässlein =	·0413 =	1·5
10 Mässlein	= 1 Sester =	·4127 =	15
10 Sester	= 1 Malter =	4·1268 =	150
10 Malter	= 1 Zuber =	41·2679 =	1500

WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Grains Troy.	Grammes.
10 As	= 1 Pfennig =	7·7163 =	·5
		lbs. Av.	
10 Pfennig	= 1 Centas =	·011023 =	5
10 Centas	= 1 Zehnling =	·11023 =	50
10 Zehnling	= 1 Pfund =	1·1023 =	500
			Kilogrammes.
100 Pfund	= 1 Centner =	110·230 =	50000 or 50

XVII.—BAVARIA.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic Name.*	*English value.*	*Metric value.*
		Inches.	Metres.
12 Linien	= 1 Zoll =	·95756 =	·02432 or 2·43216 Centimetres
		Feet.	
12 Zoll	= 1 Fuss =	·95756 =	·2918592
6 Fuss	= 1 Klafter =	5·74536 =	1·751155
10 Fuss	= 1 Ruthe =	9·5756 =	2 918592
12703 Fuss	= 1 Stunde =	=	3·70749 Kilometres

The Fuss was divided by Surveyors into 10 Zoll, each of 10 Linien. The Elle contained 2 Fuss 10½ Zoll, and was equal to ·91101 English Yard, or 2·73303 English Feet, or ·833 Mètre.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Sq. Yards.	Sq. Metres.
144 Sq. Zoll	= 1 Sq. Fuss =	·10187970 =	·0851818
100 Sq. Fuss	= 1 Sq. Ruthe =	10·187970 =	8·51818
400 Sq. Ruthen	= 1 Tagwerk, Morgen, or Juchert =	4075·18810 Acre. or ·842	3407·272

OLD CUBIC MEASURES.

The Cubic Fuss of 1728 Cubic Zoll = ·878 English Cubic Foot, or ·02486 Cubic Mètre. The Klafter of (6 × 6 × 3½ Fuss) 126 Cubic Fuss = 110·628 English Cubic Feet, or 3·1325 Cubic Mètres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Bushels.	Litres.
4 Dreisigers	= 1 Maassl	= ·12745	= 4·6325
4 Maassls	= 1 Viertel	= ·5098	= 18·5298
2 Viertel	= 1 Metze	= 1·0196	= 37·0596
6 Metzen	= 1 Schäffel	= 6·1176	= 222·3576
		Quarters.	
Schäffel	= 1 Muth	= 3·0588	= 889 304

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gallons.	Litres.
	1 Maaskanne	= ·23529	= 1·06903
60 Maaskannen	= 1 Eimer	= 15·05356	= 68·4177
25 Eimer	= 1 Fass	= 376·464	= 1710 4425

The Schenk-Eimer, the ordinary Eimer used in the Wine trade, contained only 60 Maaskannen, and was equal to 14·1174 British Imperial Gallons, or 64·1418 Litres.

OLD WEIGHTS.

Divisions.	*Systematic Name.*	*English value.*	*Metric value.*
		Drams. Av.	Grammes.
4 Quentchen	= 1 Loth	= 9·87656	= 17·5
		lb. av.	
32 Loth	= 1 Pfund	= 1·23457	= 560
			Kilogrammes.
100 Pfund	= 1 Centner	= 123·457	= 56000 or 56

The Apothecaries' Pfund, or Pfund of Nuremberg, was divided into 24 Loth, each of 12 Unzen. 14 Apothecaries' Pfund = 9 Commercial Pfund. The Apothecaries' Pfund = ·793652 lbs. av., or 360 Grammes.

The Mark for weighing the precious metals = 3608·9506 English Troy Grains, or 280 Grammes, and was divided for Gold into 24 Carats, each of 12 Grains, and for Silver into 16 Loth, each of 18 Grains.

In Rhenish Bavaria the Fuss = $\frac{1}{3}$ Mètre, or 13·123596 English Inches, and the Elle = $1\frac{1}{2}$ Mètre, or 47·244948 English Inches. The Cubic Klafter is 6 × 6 × 6 = 144 Cubic Fuss. *Dry goods* were measured by the Hectolitre, (see France) divided into 4 Viernfel, each of 2 Simmer, each of 4 Vierling.

XVIII.—WURTEMBURG.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Line.	Metres.
	1 Punkte	= ·11126	= ·000286
		Inches.	
10 Punkte	= 1 Linie	= ·1126	= ·002864
10 Linien	= 1 Zoll	= 1·126	= ·028649
		Feet.	
10 Zoll	= 1 Fuss	= ·93995	= ·28649
10 Fuss	= 1 Ruthe	= 9·3995	= 2·8649

The Klafter of 6 Fuss = 5·6397 English Feet, or 1·71894 Mètre. The Elle of 2·144 Fuss = 2·01525 English Feet, or ·614234 Mètre. The Meile of 26000 Fuss = 8146·23316 English Yards, or 4·6285 English Miles, or 7·44875 Kilometres.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Sq Feet.	Sq. Metre
100 Square Zoll	= 1 Sq. Fuss =	·883506	= ·0820765
100 Square Fuss	= 1 Sqr. Ruthe =	88·3506002	= 8·207652
		Sq. Yards.	
384 Square Ruthen	= 1 Morgen =	3769·625608 Acre or 77884	= 3151·73837

The Morgen was also divided into 4 Viertels.

OLD CUBIC MEASURES.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Cubic Feet.	Cubic Metres
1000 Cubic Linien	= 1 Cubic Zoll =	·00083045	= ·000023514
1000 Cubic Zoll	= 1 Cubic Fuss =	·8304514	= ·023514176
144 Cubic Fuss	= 1 Cubic Klafter =	866·985	= 3·386

The Klafter was used for measuring Firewood, it was 6 Fuss by 6 Fuss by 4 Fuss.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Quarts	Litres
4 Viertlein =	1 Ecklein =	1·21896 =	·692289
		Gallons	
8 Ecklein =	1 Vierling =	1·21896 =	5·5383125
		Bushels	
4 Vierling =	1 Simri =	1·21896 =	22 15325
8 Simri =	1 Scheffel =	4·87584 =	177·226

There was also the *Mässlein* of 2 Ecklein = 2·43792 English Quarts, and the *Achtel* of 2 Mässlein, equal to half a Vierling, or to ·60948 of a British Imperial Gallon.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value*	*Metric value.*
		Gills.	Litres.
	1 Quart or Schoppen =	3·23464 =	·45926
		Quarts.	
4 Quarts or Schoppen =	1 Helleich Maass =	1·61732 =	1·83704
		Gallons.	
10 Helleich Maass =	1 Imi =	4·0433 =	18·3704
16 Imi =	1 Eimer =	64·6928 =	293 9264
6 Eimer =	1 Fuder =	388·1568 =	1763 5584

OLD WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Oz. Av.	Grammes.
4 Quentchen =	1 Loth =	·515575 =	14·5853
		lbs. av.	
32 Loth =	1 Pfund =	1·03115 =	466·73
100 Heavy, or 104 Light Pfund =	1 Centner =	107·2396 =	4853·992
100 Light Pfund		103·115 =	4673·0

XIX.—HESSE-DARMSTADT.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metre
	1 Linie	= ·098426	= ·0052
10 Linien	= 1 Zoll	= ·984269	= ·025
10 Zoll	= 1 Fuss	= 9·842697	= ·25
		Feet.	
10 Fuss	= 1 Klafter	= 8·2022	= 2·5

The Elle of 24 Zoll = 1·9685395 English Foot, or ·6 Mètre.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Sq. Feet	Sq. Metres
100 Sq. Zoll	= 1 Sq. Fuss =	·6727608 =	·05
100 Sq. Fuss	= 1 Sq. Klafter =	67·27608 =	6·2652
100 Square Klafter	= 1 Viertel Morgen =	6727·60848 =	625
4 Viertel Morgen	= 1 Morgen =	26910·43393 Acre or ·61788 =	2500 or Ares 25

OLD CUBIC MEASURES.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Cubic Feet.	Cubic Metres
1000 Cubic Zoll	= 1 Cubic Fuss =	·5518119 =	·015625
1000 Cubic Fuss	= 1 Cubic Klafter =	551·811903 =	15·625

The Stecken of 100 Cubic Fuss = 55·18119 English Cubic Feet, or 1·5625 Mètre. It is used for measuring Firewood, and is 5 Fuss by 5 Fuss by 4 Fuss.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions	*Systematic name.*	*English value.*	*Metric value.*
		Bushels.	Litres.
4 Maaschen	= 1 Gescheid =	·055 =	2
4 Gescheid	= 1 Kumpf =	·2201 =	8
4 Kumpf	= 1 Simmer =	·8804 =	32
4 Simmer	= 1 Malter =	3·5216 =	128

The Maaschen was equal to ½ Litre, or ·44 British Imperial Gallon.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Gallons.	Litres.
4 Quarts or Schoppen	= 1 Maass	= ·44019	= 2
4 Maass	= 1 Viertel	= 1·76076	= 8
20 Viertel	= 1 Ohm	= 35·2152	= 160
6 Ohm	= 1 Fuder	= 211·2912	= 960

The Quart or Schoppen is equal to ½ Litre, or ·44 British Imperial Gallon.

OLD WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
			Grammes.
4 Pfennig	= 1 Quentchen	= ·13779	= 3·90625
4 Quentchen	= 1 Loth	= ·55116	= 15·625
		lb. Av.	
32 Loth	= 1 Pfund	= 1·1023	= 500
			Kilogrammes.
100 Pfund	= 1 Centner	= 110·233	= 50000 or 50

XX.—MECKLENBURG SCHWERIN. MECKLENBURG-STRELITZ.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic Name.*	*English value.*	*Metric value.*
		Inches.	Metres.
10 Punkte	= 1 Linie	= ·11456	= ·00291
10 Linien	= 1 Zoll	= 1·14568	= ·0291
10 Zoll	= 1 Fuss	= 11·45689	= ·291
		Yards.	
16 Fuss	= 1 Ruthe	= 5·09182	= 4·656

The Linear measures given in the table were those of Mecklenburg, and were used in Land Surveying. The Rostock Fuss = 11·326936 English inches, or ·287699 Metre. The Fuss used by Builders was the same as that of Hamburg. The Rostock Elle of 2 Rostock Fuss = 22·653872 English Inches, or ·575398 Metre. The Mecklenburg Meile was the same as that of Prussia.

OLD MEASURES OF SURFACE.

The Hufe was a variable measure, signifying as much land as 300 Rostock Scheffeln of Grain would sow. The Morgen was also a variable measure. In some places it was 400, in others 300, in others 200, and in others 100 Square Ruthen. A Square Ruthe = **25**·9266527 English Square Yards, or **84**·7578 Square Metres.

OLD CUBIC MEASURES.

The (Builders') Cubic Fuss was the same as the Hamburg Cubic Fuss, and = ·83115 English Cubic Foot, or ·023534 Cubic Metre. The Faden of 147 (Builders') Cubic Fuss = **122**·17905 English Cubic Feet, or **3**·459498 Cubic Metres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.* Imperial Quarters.	*Metric value.* Litres.
4 Spint or Metzen =	1 Fass or Viertel =	·033435 =	**9**·72225
4 Viertel or Fass =	1 Scheffel =	·13374 =	**38**·889
12 Scheffel =	1 Drömt =	**1**·60488 =	**466**·668
8 Drömt =	1 Last =	**12**·83904 =	**3733**·344

Salt and Coal are measured with a smaller Last of 12 Tonne, each of 6 Scheffeln.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.* Imperial Pints.	*Metric value* Litres.
	1 Poll, or Quartier =	**1**·594706 =	·905685
2 Poll, or Quartier =	1 Kanne =	**3**·18941 =	**1**·81137
2 Kannen =	1 Stubchen =	**6**·37882 =	**3**·62274
		Imperial Gallons.	
2 Stubchen =	1 Viertel =	**1**·59470 =	**7**·24548
4 Viertel =	1 Eimer =	**6**·37880 =	**28**·98192
1¼ Eimer, or 5 Viertel =	1 Anker =	**7**·97350 =	**36**·22740
4 Anker or 24 Viertel =	1 Ohm =	**31**·89400 =	**144**·90960
1½ Ohm, or 6 Anker =	1 Oxhoft =	**47**·84100 =	**217**·76440
4 Oxhoft, or 6 Ohm =	1 Fuder =	**191**·36400 =	**871**·05760

OLD WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Oz. Av.	Grammes.
4 Quentchen =	1 Loth =	·56022 =	**15**·88215
		lbs. Av.	
32 Loth =	1 Pfund =	**1**·12044 =	**508**·229
112 Pfund =	1 Centner =	**125**·48928 =	**56921**·648 or Kilogrammes. **56**·921648

The Schiffspfund of 20 Liespfund, each of 14 Pfund = **313**·7232 lbs. av. English, or **142**·30412 Kilogrammes. There was also the Schiffspfund of 20 Liespfund, each of 16 Pfund. It was equal to **358**·5408 lbs. av. English, or **197**·76137 Kilogrammes.

In Rostock there were two Pfunds of different weights in use, namely, the *Stadt-gewicht* (public scales weight) Pfund, and the *Kramer-gewicht* (retail weight) Pfund. The former is that given in the table. The Kramer-gewicht Pfund = **1**·06708 lb. Av. English or **484**·028 French Grammes.

XXI.—HAMBURG.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
8 Achtel =	1 Zoll =	·94021 =	·02388
12 Zoll =	1 Fuss =	**11**·28252 =	·28657
		Feet.	
2 Fuss =	1 Elle =	**1**·88042 =	·57314
6 Fuss =	1 Klafter or Faden =	**5**·64126 =	**1**·71942

The Elle given in the table was the Hamburg Elle, used for Silk, Linen, and Cotton goods. The Brabant Elle used for Cloths and Stuffs was equal to 1½ Hamburg Elle, and therefore to **2**·2565 English Feet, or ·687768 Metre. 4 Brabant Ellen were reckoned equal to 3 English Yards. There were 3 sorts of Ruthe used in Hamburg, namely, the Marsch-Ruthe of 14 Hamburg Fuss, and equal to **13**·16294 English Feet, or **4**·01198 Metres; the Geest-Ruthe of 16 Hamburg Fuss, and equal to **15**·04336 English Feet, or **4**·58512 Metres; and the Rheinland Ruthe of 12 Rheinland Fuss, and equal to **12**·35592 English Feet, or **3**·7662 Metres. The Rheinland or Prussian Fuss, used by Surveyors and Engineers, was divided into 12 Zoll, each of 10 Linien, each of 10 Theile, and was equal to **1**·02976 English Foot, or ·31385 Metre.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Sq. Feet.	Sq. Metres
144 Sq. Zoll =	1 Sq. Fuss =	·88400 =	·082123
196 Sqr. Fuss =	1 Square Marsch-Ruthe =	173·264 =	16·096108
256 Sqr. Fuss =	1 Square Geest-Ruthe =	226·304 =	21·023488
		Sq. Yards	
200 Sqr. Geest-Ruthen =	1 Scheffel Geest-land =	5028·977 or Acre. 1·039 =	4204·697 or Ares. 42·046
		Sq. Yards	Sq. Metres
600 Sqr. Marsch-Ruthen =	1 Morgen =	11550·933 or Acres. 2·386 =	9657·664 or Ares. 96·576

A space called Travelboden was 5600 Hamburg Square Fuss, and was equal to 550·4 English Square Yards, or 459·8888 Square Metres.

OLD CUBIC MEASURES.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Cubic Feet.	Cubic Metres
1728 Cubic Zoll =	1 Cubic Fuss =	·83115 =	2·3534
88⅝ Cubic Fuss =	1 Cubic Klafter =	73·88 =	2·091911
120 Cubic Fuss =	1 Tehr =	99·738 =	2·82408

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value*	*Metric value.*
		Imperial Gallons.	Litres
2 Ossel =	1 Quartier =	·1993375 =	·905685
2 Quartier =	1 Kanne =	·398675 =	1·81137
2 Kannen =	1 Stubchen =	·79735 =	3·62274
2 Stubchen =	1 Viertel =	1·59470 =	7·24548
4 Viertel =	1 Eimer =	6·37880 =	28·98192
5 Viertel, or 1¼ Eimer =	1 Anker =	7·97350 =	36·2274
6 Eimer, or 24 Viertel =	1 Tonne =	38·27280 =	173·89152
4 Anker, or 5 Eimer =	1 Ohm =	31·89400 =	144·9096
6 Anker or 1½ Ohm =	1 Oxhoft =	47·84100 =	217·3644
6 Ohm =	1 Fuder, or Tonneau =	191·36400 =	869·4576

The above were the measures for Wines and Spirits. For Beer there were the Tonne of 48 Stubchen, the Kleine-Tonne of 40 Stubchen, and the Schmal-Tonne of 32 Stubchen. The Tonne of Vinegar was 30 Stubchen. The Tonne of Oil was 32 Stubchen.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic Name.*	*English value.*	*Metric value.*
2 Small Maass =	1 Large Maass =	.04725 =	1·71752
4 Large Maass =	1 Spint =	·18901 =	6·870187
4 Spint =	1 Himten =	·75604 =	27·48075
2 Himten =	1 Fass =	1·51208 =	54·9615
2 Fass =	1 Scheffel =	3·02416 =	109·923
10 Scheffeln =	1 Wispel =	30·2416 =	1099·23
3 Wispel =	1 Last =	90·7248 =	3297·69 or Hectolitres. 32·9769

Of Wheat, Rye, or Peas, the Scheffel contained 2 Fass; but of Barley or Oats it contained 3 Fass. 100 Fass = 38·9010 British Imperial Quarters, or 54·9615 Hectolitres. The Tonne of Salt = 4·5337 British Imperial Bushels, or 164·794 Litres. The Tonne of Lime was 6 Himten or 3 Fass, and was equal to 4·53624 British Imperial Bushels, or 164·8845 Litres.

OLD WEIGHTS.

Divisions.	*Systematic name.*	*English value.* lb. av.	*Metric value* Grammes.
10 Half Grammen =	1 Quint =	·0110232 =	5
10 Quinten =	1 (New) Unze =	·110232 =	50
10 (New) Unzen =	1 (New Metric) Pfund =	1·10232* =	500
100 Pfund =	1 Centner =	110·232 =	50000 or Kilogrammes. 50
600 (New) Pfund =	1 Last (Commercial) =	6619 92 =	3000

* Or. ·326554 of a Troy lb.

(a) OLD GOLD MONEY WEIGHTS.

Divisions.		*Systematic name.*		*English value.* Troy Grains.		*Metric value.* Grammes
12 Grains	=	1 Carat	=	1·2511	=	9·744
24 Carats, or 288 Grains	=	1 Hamburg Cologne Mark	=	30·0264	=	233·855

(b) OLD SILVER MONEY WEIGHTS.

18 Grains	= 1 Unze	=	1·87665	=	14·61593
16 Unzen or Loth, or 288 Grains	= 1 Hamburg Cologne Mark	=	30·0264	=	233·855

The Hamburg Cologne Mark is equal to ·62655 of the English lb. Troy.

(c) APOTHECARIES' WEIGHT.

20 Grains	= 1 Scruple	=	2·893315	=	1·25
3 Scruples	= 1 Dram	=	57·866300875	=	3·75
8 Drams	= 1 Unze	=	462·93047	=	30

The Apothecaries' Unze was equal to 6 Quints ($\frac{3}{5}$) of the Hamburg (New Metric) Unze, or to ·96 &c. of the English Ounce Avoirdupois.

For weighing Precious Stones the *Loth* or *Unze* (see Silver Money Weights) was divided into 71 Karats of 4 Grains each.

Corn, Pulse, and Seeds were sold, wholesale, by *weight*, not measure, viz.:—

Wheat	per Last of 5400 lbs.	*gross*-weight.
Rye	,, 5100 ,,	,,
Buck-Wheat and Barley..	,, 4800 ,,	,,
Anhalt and Magdeburg Barley according to measure.		
Small Danish Barley ..	per Last of 4320 lbs.	*gross*-weight.
Oats	,, 3600 ,,	,,
Malt	,, 3000 ,,	*net*.
Peas and Vetches.. ..	,, 5600 ,,	*gross*-weight.
Beans	,, 5520 ,,	,,
Rapeseed and Turnip-seed	,, 4800 ,,	,,
Linseed	per 180 lbs.	
Other Seeds	at 100 lbs.	*net*.

XXII.—BREMEN.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
	1 Linie =	·09493 =	·02009
10 Linien =	1 Zoll =	·94933 =	·02411
12 Zoll =	1 Fuss =	11·39196 =	·28935
2 Fuss =	1 Elle =	22·78392 =	·57870
		Feet.	
3 Ellen =	1 Klafter =	5·69598 =	1·7361
8 Ellen =	1 Ruthe =	15·18928 =	4·6296

100 Bremen Ellen were equal to **63**·2888 English Yards, and 100 English Yards were equal to **158**·006 Bremen Ellen.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Square Yards.	Square Metres.
144 Sq. Zoll*	=1 Sq. Fuss =	·10033 =	·084
256 Sq. Fuss	=1 Sq. Ruthe =	25·6853 =	21·504
120 Sq. Ruthen	=1 Morgen =	3082·2396 Acre. or ·63682 =	2580·49 or Ares. 25·8048

OLD CUBIC MEASURES.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Cubic Feet.	Cubic Metres
1728 Cubic Zoll†	= 1 Cubic Fuss	= ·857 =	·024
72 Cubic Fuss	= 1 Faden	= 61·704 =	1·728

The Faden is 6 Fuss × 6 Fuss × 2 Fuss.

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* Or 100 Square Decimal Zoll.

† Or 1000 Cubic Decimal Zoll.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Imperial Pints	Litres
4 Mingeln	= 1 Quartier	= 1·4180725	= ·787
4 Quartier	= 1 Stubchen	= 5·67229	= 3·149
		Imperial Gallons	
9 Quartier, or 2¼ Stubchen	= 1 Viertel	= 1·560	= 7·086
5 Viertel	= 1 Anker	= 7 800	= 35·430
4 Anker	= 1 Ohm	= 31·200	= 141·720
6 Anker	= 1 Oxhoft	= 46·800	= 212·580
6 Ohm	= 1 Fuder	= 280·800	= 1275·480

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Imperial Bushels	Litres
4 Spinta	= 1 Viertel	= ·50	= 18·526
4 Viertel	= 1 Scheffel	= 2·0388	= 74·104
		Imperial Quarters	
40 Scheffeln	= 1 Last	= 81·552 or 10·194	= 2964·160

OLD WEIGHTS.

The old Weights were the same as those of Hamburg (see Hamburg).

XXIII.—LUBEC.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
	1 Punkte	= ·00655	= ·0001666
12 Punkte	= 1 Linie	= ·07863	= ·0019973
12 Linien	= 1 Zoll	= ·94365	= ·0239683
12 Zoll	= 1 Fuss	= 11·3238	= ·28762
		Feet	
2 Fuss	= 1 Elle	= 1·88730	= ·57524
8 Ellen	= 1 Ruthe	= 15·0984	= 4·60192

The Lubec Geographical Mile of 15 to an Equatorial Degree was equal to 4·6807 English Miles.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Square Feet.	Sq. Metres
144 Square Zoll =	1 Square Fuss =	·8904753 =	·0827252
		Square Yards.	
256 Square Fuss =	1 Square Ruthe =	25·32907	21·177667

The Scheffel was as much land as a Scheffel of Grain would sow, and was therefore an area which varied with different Grains, and with different qualities of the same Grain. From 60 to 70 Scheffeln were reckoned to the Square Ruthe, and 24 Scheffeln to the Tonne, and 4 Tonne to the Last.

The Scheffel of 60 Square Ruthen = 1569·7446 English Square Yards, or 1270·66006 Square Metres.

OLD MEASURES OF CUBIC CAPACITY.

The Faden = 74·912 Cubic Feet English. For the measurement of Firewood there were the *Stadtfaden* and the *Forstfaden*. The Stadtfaden = 6 Fuss 7½ Zoll high, 6 Fuss 7½ Zoll broad. 10 Forstfaden were reckoned equal to 11 Stadtfaden.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Gill.	Litres.
	1 Ort =	1·6012 =	·22734375
		Imperial Pint.	
2 Ort	= 1 Plank =	·8006 =	·4546875
		Imperial Gallons.	
2 Plank	= *1 Quartier =	·20015 =	·909375
2 Quartier	= 1 Kanne =	·40030 =	1·81875
2 Kannen	= 1 Stübchen =	·80060 =	3·6375
2 Stübchen	= 1 Viertel =	1·6012 =	7·275
4 Viertel	= 1 Eimer =	6·4048 =	29·100
5 Viertel	= 1 Anker =	8·0060 =	36·375
4 Anker	= 1 Ohm =	32·0240 =	145·500
6 Anker, or 30 Viertel, or 1¼ Ohm	= 1 Oxhoft =	48·0360 =	218·250
4 Oxhoft, or 6 Ohm	= 1 Fuder =	192·144 =	873

* The Quartier was also called a Bouteille in Wine measurement.

The Fass for Brandy (in the wholesale trade) = 1 Oxhoft. The Fass or Ohm, for Beer (in the wholesale trade) was 80 Kannen, each of 2 Quartier or Kross, and was equal to 32·79793 British Imperial Gallons, or 149·016 Litres. The Beer Kanne = ·40997 British Imperial Gallons, or 1·8627 Litre.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*		*English value.*		*Metric value*
				Bushels		Litres
4 Fass	=	1 Scheffel	=	·95448	=	34·694
4 Scheffel	=	1 Tonne	=	3·81792	=	138·776
				Quarters		
3 Tonne	=	1 Drömt	=	1·43172	=	416·328
8 Drömt	=	1 Last	=	11·45376	=	3330·624

The Scheffel and its multiples above given were used for measuring Wheat, Rye, Barley, and Peas. The Scheffel for Oats and Fruit was larger, and = ·13589 British Imperial Quarter, or 38·514 Litres.

OLD WEIGHTS.

Divisions.		*Systematic name.*		*English value.*		*Metric value*
				Oz. Av.		Grammes
		1 Pfenning	=	·03351	=	·953607
4 Pfenning	=	1 Quentche	=	·13406	=	3·814429
4 Quentchen	=	1 Loth	=	·53625	=	15·257718
2 Loth	=	1 Unze	=	1·0725	=	30·415437
				lbs. av.		
8 Unzen	=	1 Mark	=	·53625	=	243·3235
2 Marks, or 32 Loths	=	1 Pfund	=	1·0725	=	486·647
						Kilogrammes
14 Pfund	=	1 Liespfund	=	15·015	=	6·813058
				Cwt.		
8 Liespfund, or 112 Pfund	=	1 Centner	=	1·0725	=	54·504464
21½ Centner	=	1 Schiffspfund	=	23·05875	=	1171·845976

The Freight Schiffspfund contained 320 Pfund, or 20 Liespfund of 16 Pfund.

SPAIN.

MEASURES AND WEIGHTS.

The Measures and Weights are exactly the same as those of France. The Metro is the Metre; the Litro is the Litre; the Gramo is the Gramme; the Area is the Are, and the Tonelada is 10 Metric Quintal of 100 Kilogrammes each. The Metric system came into use on the 1st January, 1859; it was made compulsory from 1st July, 1868. It is also the legal system for all the Spanish Colonies; the Old Spanish System of Weights and Measures, which is still occasionally used, is as follows:—

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Inches	Metres
12 Puntos =	1 Linea =	·07725 =	·001962
12 Lineas =	1 Pulgada =	·927 =	·023553
6 Pulgadas =	1 Sesma =	5·564 =	·141318
2 Sesmas, or 12 Pulgadas =	1 Pies de Burgos =	11·128 =	·28264
		Feet	
3 Pies de Burgos =	1 Vara =	2·782 =	·84792
2 Varas =	1 Estado =	5·564 =	1·69584
4 Varas =	1 Estadal =	11·128 =	3·39168
		Miles	
5000 Varas =	1 Legua (Castilian) =	2·63446 or Yards 4636⅔	4239·6 or Kilometres = 4·2396
		Miles	Metres
8000 Varas =	1 Legua (Spanish) =	4·2151 or Yards 7418⅔ =	6783·36 or Kilometres 6·78336

The Vara was also subdivided into 4 Palmos of 9 Pulgadas, or 12 Dedos, and each Dedo of 9 Lineas. 3 Pulgados = 4 Dedos.

The Passo = 5 Varas; the Cuerda = 8½ Varas = 33 Palmos. 100 English Yards = 107·84 Varas, and 100 Varas = 92·73 English Yards. The Codo for measuring timber and masts was two-thirds of the Vara.

The Geographical Legua = 7603·84 Varas; the Legua Maritima = 6653·36 Varas.

OLD MEASURES OF SURFACE.

Divisions	*Systematic name*	*English value*	*Metric value*
		Square Yards	Square Metres
9 Sqr. Pies =	1 Sqr. Vara =	·8599409 =	·7189683
16 Sqr. Varas =	1 Sqr. Estadal =	13·759054 =	11·5034932
50 Sqr. Varas =	1 Estajo =	42·9970 =	35·9484163
		Acres	Ares
576 Square Estadals =	1 Fanegada =	1·6374 =	66·26012096
50 Fanegadas =	1 Yugada =	81·87 =	3313·00604805

The Fanegada was a very varying measure, in some districts it contained only 500 Square Estadals, or 8000 Square Varas. It was divided into 12 Celeminos, each of 4 Cuartillos and was a square whose side was equal to 24 Estadals. The Arancada was the surface measure for Vineyards, and was uniform throughout Spain. It was a square whose side was equal to 20 Estadals. It contained 400 Square Estadals, or 6400 Square Varas, and was equal to about 1·1370 Acre British. The Cahizada was a vague measure denoting the area on which a Cahiz of Corn could be sown.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Imperial Gills.	Litres.
	1 Capo	= ·8877 =	·12607
		Imperial Gallons.	
4 Capos =	1 Cuartillo	= ·11099 =	·504286
4 Cuartillos =	1 Azumbre	= ·44396 =	2·017145
2 Azumbres =	1 Cuartilla	= ·88793 =	4·03429
4 Cuartillas or 8 Azumbres =	1 Arroba Mayor or Cantara	= 3·55173 =	16·13716
16 Cantaras =	1 Mayo	= 56·2768 =	258·19456

The Cuartilla = 8 Cuartillos. The Wine Bota = 30 Cantares. The Measure for Oil was the *Arroba Menor* of 25 Libras, each of 4 Panillas. The Arroba Menor = 2·7652 British Imperial Gallons, or 12·564 Litres.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*		*English value.* Bushels.		*Metric value.* Litres.
4 Ochavillos	=	1 Racion	=	·00785	=	·2889
4 Raciones	=	1 Quartillo	=	·031409	=	1·1558
2 Quartillos	=	1 Medio	=	·062819	=	2·3116
2 Medios	=	1 Almude	=	·125638	=	4·6233
12 Almuerzas (Celemines)	=	1 Fanega	=	1·507664	=	55·480
12 Fanegas	=	1 Cahiz	=	18·091968	=	665·76

OLD WEIGHTS.

Divisions.		*Systematic name.*		*English value.* Oz. Av.		*Metric value* Grammes.
12 Granos	=	1 Tomin	=	·02113	=	2·39656
3 Tomines	=	1 Adarme	=	·06340	=	7·18968
2 Adarmes	=	1 Ochavo, or Drachma	=	·12680	=	14·37937
				lbs. av.		
8 Ochavos	=	1 Onza	=	·06340	=	28·75875
8 Onzas	=	1 Marco	=	·50721	=	230·07
2 Marcos	=	1 Libra (Castiliana)	=	1·01442	=	460·14
						Kilogrammes
100 Libras	=	1 Quintal	=	101·442	=	46·014
10 Quintals	=	1 Tonelada	=	1014·42	=	460·14

Besides the ordinary Quintal of 100 Libras there was the Quintal Marco of 150 Libras (the Carga of Peru), equal to 152·163 lbs. av. English, or 690·21 Kilogrammes. In Ships' Freight the Tonelada was equal to 20 Quintals.

In Apothecaries' Weights the Onza of the above table was divided into 8 Drachms, each Drachm into 3 Scruples, each Scruple into 2 Obolos, and each Obolo into 3 Caracteres.

The chief unit in Gold and Silver Weights was the *Marco* of the above table. For Gold Weights it was divided into 50 Castellanos, each of 8 Tomines. For Silver Weights it was divided as in the table. The fineness of Gold was expressed by dividing the units of weight into 24 Carats, each of 4 Granos; and the fineness of Silver by dividing it into 12 Dineros, each of 24 Granos.

The Diamond Onza of 140 Carats contained only 560 Granos.

GIBRALTAR.

The Weights and Measures are chiefly those of the United Kingdom of Great Britain and Ireland, with the following Old Spanish Weights and Measures, viz.:—the *Pipe* = 105 Imperial Gallons; the Arroba (liquid measure) = 2·77 Imperial Gallons; the *Arroba* (weight) = 26 lbs. Avoirdupois; the Quintal of 100 lbs. = 101¾ lbs. Avoirdupois; 5 *Fanegas* of Grain = 7¾ Imperial Bushels.

PORTUGAL.

The Metric system of Weights and Measures is now used in Portugal. This system, which is exactly the same as that of France, was introduced gradually. In 1852 the Government decreed that the Weights and Measures should be re-organized upon the metric basis, and a period of ten years was fixed for its introduction and adoption. Metric *measures of length* came into use in January, 1860; Metric *weights* in July, 1861; Metric *surface measures* in July, 1862; and Metric *measures of capacity* in January, 1863.

HOLLAND.

In 1820 Holland adopted the Metric system of Weights and Measures, with Dutch names; but under the Act of 7th April, 1869, which took effect from 1st January, 1870, the Metric names of the Weights and Measures with facultative use of the old denominations in use since 1820, have been as follows, namely: Kilogram (Pond); Meter (El); Kilometer (Mijle); Are (Vierkante Roede); Hektare (Bunder); Stere (Wisse); Liter (Kan); and Hektoliter (Vat).

MEASURES OF LENGTH.

Divisions.	*Systematic name.*		*English value.*	*Metric value*
	1 Streep	=	Inches ·03937	= 1 Millimètre
10 Streepen	= 1 Duim	=	·3937079	= 1 Centimètre
10 Duimen	= 1 Palm	=	3·937079	= 1 Décimètre

MEASURES OF LENGTH—*continued.*

10 Palmen	= 1 Meter (El) =	39·37079 Yards.	= 1	Mètre
10 Meter (Ellen)	= 1 Roede =	10·936308	= 1	Décamètre
100 Roeden	= 1 Kilometer (Mijle) =	1093·6082 or nearly 5 furlongs	= 1	Kilomètre

MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.* Square Inches.	*Metric value.* Sq. Millimetre
	1 Vierkante Streep =	·001550059 =	1
100 Vierkante Streepen =	1 Vierkante Duim =	·1550059 =	Sq. Centimetre 1
100 Vierkante Duimen =	1 Vierkante Palm =	15·500591 =	Sq. Decimetre 1
100 Vierkante Palmen =	1 Vierkante El =	Sq. Yards 1·1960332 =	Centiare or Sq. Metre 1
100 Vierkante Ellen =	1 Are Vierkante Roede =	119·603321 =	Are or Sq. Decametre 1
100 Vierkante Roeden =	1 Hektare Vierkante Bunder =	Sq. Acres 2·47114299 =	Hectare 1
100 Vierkante Bunders =	1 Vierkante Mijle =	247·114299 =	Myriare or Sq. Kilometre 1

CUBIC MEASURES.

Divisions.	*Systematic name.*	*English value.* Cubic Feet	*Metric value.* Millistere
	1 Kubicke Streep =	·035317628 =	1
1000 Kubicke Streepen =	1 Kubicke Duim =	·35317628 =	Centistere 1
1000 Kubicke Duimen =	1 Kubicke Palm =	3·5317628 =	Decistere 1
1000 Kubicke Palmen =	1 Stere (Wisse) =	35·317628 =	Stere or Cubic Metre 1

In measuring the tonnage of Ships, 1½ Kubicke Ellen = 1 Scheepston, and 2 Scheepstonnen = 1 Scheepslast. The Scheepston is equal to 52·9755 Cubic Feet, and the Scheepslast to 105·951 Cubic English Feet. The Wisse is used in measuring Firewood.

MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
	1 Vingerhoed =	Pints. ·0176077 =	1 Centilitre
10 Vingerhoeden =	1 Maatje =	·176077 =	1 Decilitre
10 Maatjes =	1 Liter (Kan) =	1·760773 =	1 Litre
100 Liter(Kannen) =	{1 Hektoliter (Vat)} =	22·009667 =	1 Hektolitre

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
	1 Maatje =	Imperial Pints ·176077 =	1 Decilitre
10 Maatjes =	1 Kop =	1·760773 =	1 Litre
10 Koppen =	1 Schepel =	Imperial Gallons 2·200967 =	1 Décalitre
10 Schepels =	1 Mud or Zak =	Imperial Bushels 2·751208 =	1 Hectolitre
30 Mudden =	1 Last =	Imperial Quarters 10·31703 =	30 Hectolitre

A Market Schepel contains 2¼ Schepel, or 25 Koppen, and is equal to 5.5024175 Imperial Gallons English.

WEIGHTS. (Commercial).

Divisions.	*Systematic name.*	*English value.*	*Metric value*
	1 Korrel =	Grains Troy 1·5432349 =	1 Décigramme
10 Korrel =	1 Wigtje =	15·432349 =	1 Gramme
10 Wigtje =	1 Lood =	154·32349 =	1 Décagramme
10 Looden =	1 Onze =	lbs. av. ·220466 =	1 Hectogramme
10 Onzen =	1 Kilogram(Pond) =	2·20466 =	1 Kilogramme

The Weights used in weighing Gold and Silver are the same as those just given; the Korrel is, however, subdivided into *tenths, hundreths, and thousandth parts.*

MEDICINAL WEIGHTS.

Divisions.	*Systematic name.*	*English value* Troy Grains.	*Metric value.* Grammes.
	1 Grein =	1·00471 =	·065104
20 Greinen	=1 Scrupel =	20·094204 =	1·30208
3 Scrupels	=1 Drachma =	60·28262 =	3.90625
8 Drachmen	=1 Ons =	482·2609 =	31·25
12 Onsen	=1 Pond =	5787·1308 or ·8267475 lb. =	375

The Medical Pond is exactly $\frac{3}{4}$ths of the Commercial Pond.

BELGIUM.

WEIGHTS AND MEASURES.

The system of Weights and Measures is the Metric. It is exactly the same as that of France.

OLD SYSTEM OF WEIGHTS AND MEASURES.

OLD MEASURES OF LENGTH.—The *Pied* of 10 Pouces, each of 10 Lignes, each of 10 Traits = 3 Decimetres = 11·81123 English Inches; the *Aune* of 4 Pieds = 12 Decimetres = 3·937079 English Feet, or 1·312359 English Yards; the *Toise* of 6 Pieds, and the *Perche* of 10 Pieds.

OLD MEASURES OF SURFACE.—The *Square Pied* of 100 Sq. Pouces; the *Square Toise* of 56 Sq. Pieds; the *Square Perche* of 100 Sq. Pieds; the *Arpent* (*i.e.*, Square of 200 Pieds) of 400 Sq. Perches, or 40,000 Sq. Pieds, and the *Square Lieue* of 6,400 Arpents.

OLD CUBIC MEASURES.—*Cubic Pied* of 1000 Cubic Pouces; the *Cubic Toise* of 246 Cubic Pieds; the *Cubic Perche* of 1000 Cubic Pieds; the *Moule* (for wood) of 108 Cubic Pieds; the *Bauche* of 120 Cubic Pieds.

OLD LIQUID MEASURES.—The *Pot* = $\frac{1}{4}$ Litre = ·88097 English Imperial Pint; the *Braude* of 25 Pots, the *Gerle* of 66 Pots, and the *Muid* of 100 Pots.

OLD DRY MEASURES.—The *Pot* (immi) = 1$\frac{1}{4}$ Litre; the *Boisseau* = 15 Litres = 3·30366 British Imperial Gallons; the *Sac* of 10 Boisseaux; and the *Bosse* or Half Boisseau.

OLD WEIGHTS.—The *Livre* = 500 Grammes = 1·10231 lbs. Avoirdupois English, and the *Quintal* of 100 Livres.

DENMARK.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
	1 Linie =	Inches ·08581 =	Metres ·021795
12 Linier =	1 Tomme =	1·02972 =	·261544
		Feet	
12 Tommer =	1 Fod =	1·02972 =	·31385
2 Fod =	1 Alen =	2·05944 =	·627707
3 Alen (or 6 Fod) =	1 Favn =	6·17833 =	1·883121
2 Favn (or 12 Fod) =	1 Rode =	12·35666 =	3·766242
24000 Fod, or 2000 Roder =	1 Danish Mile or Mil =	Yards 8237·77349 or Miles 4·68055 =	Kilmetres 7·532484

One Danish Sea Mile is equal to 23642 Danish Fod; one Geographical Mile (15 to a degree) is equal to 23609·2 Fod. In Nautical language 600 Fod, or 100 Favn are called 1 "Kabellængde." Surveyors divide the Fod, according to the Decimal system, into 10 Tommer; each Tomme into 10 Linier; and 1 Rode into 10 Fod. In Holstein and in Sleswick, Hamburg Measures are mostly used; 23 feet Hamburg Measure being equal to 21 feet Danish.

MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Square Foot	Sq. Meters.
144 Sq. Linie =	1 Sq. Tomme =	·08836 =	·0006840
144 Sq. Tommer =	1 Sq. Fod =	1·060323 =	·0985018
		Square Yards	
144 Sq. Fod =	1 Sq. Rode =	16·965172 =	14·18469444

The "Tönde Land" (used in field measusement) of 56000 Square Fod, or 14000 Square Alen = 6597·5670656 English Square Yards, or 1·36313 English Acre, or 4816·27006 Square Mètres, or 48·1627006 Ares; and 11 Tönder land are equal to about 15 English Acres.

CUBIC MEASURES.

Divisions.	*Systematic name.*	*English value.* Cubic Foot	*Metric value.* Cubic Metre
1728 Cubic Linier	= 1 Cubic Tomme	= ·000631	= ·00001789
1728 Cubic Tommer	= 1 Cubic Fod	= 1·091836	= ·03091479

In Firewood measurement the Favn contains 72 Danish Cubic Fod. It is 6 Fod × 6 Fod × 2 Fod, and is equal to 78·61219 English Cubic Feet, or 2·22586538 Cubic Mètres. In Forest measurement the Favn is 6¼ Fod by 6¼ Fod by 2 Fod. It contains 84½ Danish Cubic Fod, and is equal to 92·2599 English Cubic Feet, or 2·6123 Cubic Mètres.

MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic Name.*	*English value.* Imperial Pints	*Metric value.* Litres.
	1 Pægle	= ·424785	= ·24125
3 Pægle	= 1 Flaske (only for Liquids)	= 1·274355	= ·72375
4 Pægle	= 1 Pot	= 1·699146	= ·965
2 Potter	= 1 Kande	= 3·39828	= 1·93
		Imperial Gallons	
4 Kander or 8 Potter	= 1 Viertel (only for Spirits)	= 1·699146	= 7·72
38 Potter, or 4¾ Viertel	= 1 Anker (only for Liquids)	= 8·070945	= 36·67
136 Potter	= 1 Tonde	= 28·88548	= 131·24
6 Ankerne	= 1 Oxehoved (for Wine and Spirits)	= 48·42567	= 220·02
4 Oxehoveder	= 1 Fad	= 193·70268	= 880·08

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.* Imperial Gallons	*Metric value.* Litres
	1 Pot	= ·21239	= ·9651
		Imperial Bushels	
18 Potter	= 1 Skeppe	= ·47788	= 17·370
2 Skepper	= 1 Fjerdingkar	= ·955769	= 34·740
4 Fjerdingkar	= 1 Tönde	= 3·823079	= 138·960
12 Tönder	= 1 Læst	= 45·876948	= 1667·52

The unit of measures of capacity, both for liquids and solids, is the Pot, which is equal to 54 Cubic Tommer (inches), or $\frac{1}{32}$ of 1 Cubic Fod.

The following Measures for Wine and Spirits are sometimes (but not frequently) used:—

Danish value.		*Systematic name.*		*English value.* Imperial Gallons		*Metric value.* Litres
160 Potter	=	1 Ahme	=	33·98288	=	154·4
480 Potter	=	1 Pibe	=	101·94864	=	463·2
1200 Potter	=	1 Stykfad	=	2548·716	=	1158

The ordinary large Measure for Dry and Liquid Goods is a Tönde; but this varies in size according to the goods; it is sometimes divided into 8 Skjepper, or 32 Fjerdingkar, &c. Of course the size of the Skjeppe varies according to the size of the Tonder, of which it is a subdivision. 12 Tönder (Corn, Salt, Coals,) are one Læst. The Commerce Læst is the Standard Measure for Ships, and is equal to 2·52 Tons English.

Beer, and also some Dry Goods, are measured by the Öltönde of 136 Potter, and divided into 4 Fjerdingkar; one Fjerding equals 2 Otting Kar, each Otting equals 17 Potter.

Corn, and many other solids, are measured by the Korntönde of 144 Potter. The Korntönde is divided into 8 Skjepper, or 32 Fjerdingkar, or 64 Ottingkar.

Salt, Coal, Charcoal, and Bark are measured by the Salttönde of 176 Potter. The Salt-tönde is divided as the Korntönde. The Tar-tönde is equal to 120 Potter.

WEIGHTS.

Divisions.		*Systematic name.*		*English value.* Troy Grains		*Metric value.* Grammes
		1 Ort	=	7·71631	=	·05
10 Ort	=	1 Kvint	=	77·1631	=	5
				lbs. av.		
100 Kvinten	=	1 Pund	=	1·10233	=	500
100 Pund	=	1 Centner	=	110·233	=	50000 or Kilogrammes 50
40 Centner	=	1 Læst	=	4409·32	=	2000
52 Centner	=	1 Skiplæst	=	5732·116	=	2600

This division of the pound, according to the Decimal system, has been in force since 1st July, 1861. Until then the Pund was divided into 32 Lod, each of 4 Kvintin, each of 4 Ort, and these weights are still in temporary use.

A "Lispund" is 16 Pund; a "Skippund" is 320 Pund Besides these Commercial Weights, there is a different weight for Silver and Gold, and a third used only for drugs.

WEIGHTS FOR MEDICINES, & FOR GOLD, SILVER, PRECIOUS STONES, AND PEARLS.

The Metric system of Gramme Weights is used for weighing medicines, precious metals, pearls, and precious stones.

OLD WEIGHTS FOR SILVER AND GOLD.

Divisions.	*Systematic name.*	*English value*	*Metric value*
		Troy Grains	Grammes
4 Ort	= 1 Kvint	= 55·28125	= 3·676
4 Kvintin	= 1 Lod	= 221·125	= 14·704
16 Lod, or 24 Karat	= 1 Mark	= lbs. av. ·55116	= 235·264
2 Marks	= 1 Pund	= 1·10233	= 470·588
3 Green	= 1 Gran	= 40·1875	= 2·4509
4 Gran	= 1 Karat	= 160·75	= 9·8039

The Danish Silver Pund, or Solvpund, is $\frac{1}{17}$ less than the ordinary Pund, and is equal to $9776\frac{1}{17}$ Dutch "As." The Solvpund may, according to the above table, be divided in two ways, viz.:—either into 32 Lod = 128 Kvinten = 512 Ort; or into 48 Karat (each equal to $1\frac{1}{2}$ Lod) = 192 Gran = 576 Green.

OLD APOTHECARIES' WEIGHT.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains	Grammes
20 Gran	= 1 Skrupel =	2·797265	= 1·241808
3 Skrupel	= 1 Drachme =	55·945312	= 3·725625
6 Drachmer	= 1 Unze =	335·671875	= 22·35375
16 Unzer	= 1 Pund =	5370¾ or lbs. av. ·7672	= 357·66

SWEDEN.

By the Act of the 19th May, 1875, the Metric system of Weights and Measures was adopted in Sweden.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*		*Metric value.*
	1 Linie =	Inches ·116893	=	Metres ·002969
10 Linier	= 1 Tum =	1·16893	=	·029690
10 Tum	= 1 Fot =	11·68923	=	·296901
10 Fot	= 1 Stöng =	Feet 9·741083	=	2·96901
20 Stänger	= 1 Ref =	Yards 32·470276	=	29·6901
360 Ref	= 1 Mil =	11689·299360 or Miles 6·64164	=	10688·436 or Kilometres 10·688436

The Aln of 2 Fot = ·6494 of an English Yard, or ·5938 Mètre, and the Famn of 6 Foot = 5·8446 English Feet, or 1·484505 Mètre. The Standard Swedish Fot may be found from the following rule:—a pendulum in vacuo beating seconds of mean solar time at Stockholm at the sea level when the thermometer is at 15° Celsius, measures 3·35064 Swedish Fot.

OLD MEASURES OF SURFACE.

Swedish value.	*Systematic name.*	*English value.*		*Metric value*
100 Sqr. Linier	= 1 Sq. Tum =	Square Inches 1·36639	=	Square Metres ·000881
100 Sqr. Tum	= 1 Sq. Fot =	136·63973	=	·088150
100 Sqr. Fot	= 1 Sq. Stöng =	Square Feet 94·888704	=	8·81502
100 Sqr. Stanger	= 1 Sq. Ref =	9488·87045 or Acres ·21762	=	881·50203 or Ares 8·815023

The Square Aln of 4 Square Fot = 3·79554 English Square Feet, or ·352600815 Square Mètre. The Tunnland of 56000 Square Fot, or 14000 Square Aln, or 5·6 Square Ref = 5904·186057 English Square Yards, or 1·21987 English Acre, or 49·364114 Ares.

OLD CUBIC MEASURES.

Swedish value.	*Systematic name.*	*English value.* Cubic Feet	*Metric value* Cubic Metres
1000 Cubic Tum	= 1 Cubic Fot =	·9243108	= ·02617188
8 Cubic Fot	= 1 Cubic Aln =	7·3944864	= ·20937504

MEASURES OF CAPACITY FOR DRY GOODS AND LIQUIDS.

Swedish value.	*Systematic name.*	*English value.* Imperial Pints	*Metric value* Litres.
1000 Cubic Linier	=1 Cubic Tum =	·0460* =	·02617
100 Cubic Tum	=1 Kannor =	4·6083 =	2·617188
1000 Cubic Tum or 10 Kannor	=1 Cubic Fot =	Imperial Gallons 5·7604 =	26·17188
8 Cubic Fot	=1 Cubic Aln =	46·0832 =	209·3750

OLD WEIGHTS.

Swedish value.	*Systematic name.*	*English value.* Grains Troy	*Metric value.* Grammes
	1 Korn =	·6559 =	·042583
100 Korn	=1 Ort =	65·59 =	4·253895
		lbs. av.	
100 Ort	=1 Skoalpund=	·9377 =	425·3895
			Kilogrammes
100 Skoalpund	=1 Centner =	93·77289 =	42·53395
100 Centner	= 1 Ny-läst =	9377·289 or Cwt. 83·72321	= 4253·395

Medical men and Apothecaries used indifferently both the Legal system of Weights, just given, and the old Pharmaceutical Weights of the *Grain*, the *Scruple*, and the *Ounce*. In the country the legal Weights were most generally used in writing Prescriptions and compounding Drugs.

The Weights and Measures given above were the legal ones, but the old, or common system superseded by them was also occasionally used, and was as follows:—*Length.*—Fot of 12

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* These English values have been calculated at the rate of 277·274 English Cubic Inches to the British Imperial Gallon, the equivalent of the Swedish Cubic Fot being taken as 1597·2228488789 English Cubic Inches.

Tum, of 12 Linier = 11·68923 English Inches, or ·296901 Mètre; the Aln of 2 Fot, and the Famn of 6 Fot. *Surface.*—The Tunnland of 32 Kappland, or 14000 Square Aln = 1·21987 English Acre, or 49·364114 Ares. *Cubic Measures.*—The Cubic Famn, Aln, Fot, and Linie. *Capacity* (*a*) *Dry Goods.*—The Kannor was the fundamental unit both for Dry Goods and Liquids. It was equal to ·57603 British Imperial Gallon or 2·617189 Litres. The Tunna was a measure whose cubic contents varied with different sorts of goods. In Fruit it was 56, in Salt or Lime, it was 59½, in Grain (heaped measure) it was 63, in Malt it was 66½, and in Fresh Herrings it was 80 Kannor. There was also a Tunna of 48 Kannor. The Tunna was divided into 2 Spann, each of 2 Half-Spann, each of 2 Fjerdingar, each of 4 Kappar. The Kannor in Dry Measure was divided into 2 Stop, each of 4 Quarters, each of 4 Ort. The Tunna of 56 Kannor = 4·03221 British Imperial Bushels, or 146·563 Litres. The Tunna of 63 Kannor = 4·53624 British Imperial Bushels, or 164·8829 Litres. A Last of Coal was 12 Tunnor, each of 63 Kannor. (*b*) *Liquids.*—The Kannor, each of 2 Stop, each of 2 Quarters, each of 4 Jumfrur = ·57603 British Imperial Gallon, or 2·617189 Litres. The Beer Tunna contains 48 Kannor. *Weights.*—Before the adoption of the new system there were 5 different sorts of Weights in use in Sweden, namely:—1. Commercial Weight. 2. Iron or Freight Weight. 3. Mark Weight used by Miners. 4. Mark Weight used in country towns. 5. Apothecaries' Weight. The Pund of 32 Lod, each of 4 Quintin. The Lispund of 20 Pund, and the Skeppund of 20 Lispund. The Skeppund, *Commercial Weight* = 400 Pund Commercial Weight, but the Skeppund, *Freight Weight*, of 20 Lispund, each of 20 Pund, is equal to only 320 Pund Commercial Weight. A Centner is 120 Pund Commercial Weight.

A Pund, Commercial Weight = ·9377 lb. av. English, or 425·3895 Grammes.

A Pund, Freight Weight = ·75016 lb. av. English, or 340·272 Grammes.

A Pund, Miners' Mark Weight = ·8285 lb. av. English, or 375·826 Grammes.

A Pund, Country Towns' Mark Weight = ·7891 lb. av. English, or 357·956.

A Pund, Apothecaries' Weight = ·7858 lb. av. English, or 356·437 Grammes.

The Old Apothecaries' Weights were as follows:—

Swedish value.		*Systematic name.*		*English value* Troy Grains		*Metric value.* Grammes
20 Gran	=	1 Scrupe	=	19·1	=	1·23429
3 Scrupeler	=	1 Drachma	=	57·3	=	3·71288
8 Drachmer	=	1 Unts	=	458·4	=	29·70308
12 Uns	=	1 Skolpund	=	5501	=	356·437

NORWAY.

By the law of the 22nd May, 1875, the Metric system of Weights and Measures was introduced in Norway at the expiration of three years from the passing of the law. It is as follows:—

METRIC MEASURES OF LENGTH.

The Meter, of 10 Decimeters, or 100 Centimeters, or 1000 Millimeters = 3·187 Old Norwegian Fod, or 39·37079 Inches English. The Kilometer of 1000 Meters = 1093·63305 English Yards, or ·62138 English Mile.

METRIC MEASURES OF SURFACE.

The *Kuadrat-Meter*, of 100 Kuadrat-Decimeters, or 10,000 Kuadrat-Centimeters, or 1,000,000 Kuadrat-Millimeters, = 10·159 Old Norwegian Kuadrat-Fod, or 1·19603 English Square Yards. The *Ar*, of 100 Kuadrat-Meters, = 119·60332 English Square Yards; the *Hektar*, of 100 Ar = 2·47114 English Statute Acres; the *Kuadrat-Kilometer* of 100 Hektars = 247·114 English Acres.

METRIC CUBIC MEASURES.

The *Kubikmeter*, divided into 1000 Kubik-Decimeters, = 1·30802 Cubic Yard English; the Kubik-Decimeter of 1000 Kubik-Centimeters = 61·02705 English Cubic Inches.

METRIC HOLLOW MEASURES,

The *Liter*, the 1000th part of a Kubik-Meter, is the unit. It is equal to 1·0362 old Norwegian Pot, or 1·76195 British Imperial Pint. The Liter is divided into 10 Decilitres or 100 Centilitres. The *Hektoliter* of 100 Liters = ·34413 British Imperial Quarter.

METRIC WEIGHTS.

The Kilogram of 10 Hektograms, or 1000 Grams = 2·0076 Old Norwegian Skaalpund, or 2·20462 lbs. Av. English. The *Gram* of 10 Decigrams, or 100 Centigrams, or 1000 Milligrams = 15·43234 Troy Grains.

Metric equivalents of the Old Norwegian Weights and Measures, and Old Norwegian equivalents of Metric Weights and Measures as given in the law of 22nd May, 1875.

1 Fod	=	·3137	Meter
1 Kuadratfod	=	·09843	Quadrat-meter
1 Kubik-fod	=	·03088	Kubik-meter
1 Korntönde	=	138·97	Litres
1 Korn-Topmaal	=	160	,,
1 Skjeppe-Topmaal	=	20	,,
1 Skjeppe	=	17·372	,,
1 Liter	=	1·0362	Pot
1 Kilogram	=	2·0076	Skaalpund
1 Pot	=	·9651	,,
1 Skaalpund	=	·4981	Kilogram
1 Meter	=	3·187	Fod
1 Kuadratmeter	=	10·159	Kuadratfod
1 Kubikmeter	=	32·38	Kubikfod

The following old denominations are applied to definite Weights and Measures in the Metric system :—

The Mil is 11 Kilometers; the Fjerdingmil is 2·8 Kilometers, and the ½ Fjerdingmil is 1·4 Kilometers.

The Favn is 1 Meter 88 Centimeters. The Alen is 62·8 and the Fod is 31·4 Centimeters; the Tomme is 26 Millimeters. The Lachter is 2 Meters.

The Tonde Land is 40 and the Maal Yard is 10 Ar. The Kuadrat Lachter is 4 and the Kuadrat Favn is 3·5 Kuadrat Meters.

The Kuadrat Alen is 40 and the Kuadrat Fod is 10 Kuadrat Decimeters.

The Kuadrat Tomme is 7 Kuadrat Centimeters.

The Kubik Lachter is 8, the Kubik Favn is 6½, and the Kubik Alen is ½ Kubik Meters. The Kubik Fod is 31 Kubik Decimetres Kubik Tomme is 18 Cubik Centimeters.

The Korntonde is 139 and the Fisketonde 116 Liters. The Anker is 38·5, the Skjeppe is 17·4, and the Skjeppe Topmaal is 20 Liters. The Kande is 2 Liters, and the Pot is 1 Liter.

The Kommerce Læst (Trælast) is 5 and the Læst Kul is 2 Kubik Meters; the Kulmaal is ½ and the Tonde Malm is ¼ Kubikmeter.

The Skippund is 160 and the Lispund is 8 Kilograms; the Vog is 18 and the Bismerpund is 6 Kilograms. The Skaalpund is ½ and the Mark is ¼ Kilogram.

SWITZERLAND.

On the 1st January, 1873, the Metric system of Weights and Measures became the legal system in Switzerland.

METRIC MEASURES OF LENGTH.

	Systematic name.	*Old Swiss value.*	*English value.*
			Inches
	=1 Millimeter	= 3½ Striche	= ·039
10 Millimeters	=1 Centimeter	= 3½ Linien	= ·393
10 Centimeters	=1 Decimeter	= 3½ Zoll	= 3·937
10 Decimeters	=1 Meter	= 3½ Fuss	= 39·371
			Yards
10 Meters	=1 Dekameter	= 16⅔ Ellen	= 10·936
10 Dekameters	=1 Hektometer	= 55⅔ Klafter	=109·363
10 Hektometers	=1 Kilometer	=333⅓ Ruthen	=1093·633
			Miles
	24 Kilometers	= 5 Stunden	= 14·913

ABBREVIATIONS.

M/m = millimetre; c/m = centimetre; d/m = decimetre; M = metre; DM = dekametre; HM = hectometre; KM = kilometre.

METRIC MEASURES OF SURFACE.

	Systematic name.	*Old Swiss value.*	*English value*
		Sq. Fuss.	Sq. Inches
	=1 Sq. Decimetre	= ·111	= 15·5
			Sq. Yards
100 Sq. Decimetres	=1 Centiar	=11·11	= 1·196
		Sq. Ruthen	
100 Centiars	=1 Are	=11·11	= 119·603
		Juchart	Acres.
100 Ares.	=1 Hectare	= 2·7775	= 2·4711

METRIC SOLID MEASURES.

	Systematic name.		*Old Swiss value.*		*English value.*
	= 1 Décistere	=	Cubic Fuss 3·703	=	Cubic Feet 3·531
10 Decisteres	= 1 Stere	=	37·037	=	35·316
10 Steres	= 1 Dekastere	=	370·370	=	335·165

METRIC MEASURES OF CAPACITY.

	Systematic name.		*Old Swiss value.*		*English value.*
	1 Millilitre	=	Schoppen ·0026	=	Minims 16·9147
10 Millilitres	= 1 Centilitre	=	·0266	=	F. Drachms 2·8191
10 Centilitres	= 1 Decilitre	=	·2666	=	F. Ounces 3·5239
10 Decilitres	= 1 Litre	=	2·6666	=	Imperial Pints 1·7619
10 Litres	= 1 Dekalitre	=	Mass 6⅔	=	Gallons 2·2024
10 Dekalitres	= 1 Hectolitre	=	Malter ⅔	=	Bushels 2·753
10 Hectolitres	= 1 Kilolitre	=	6⅔	=	Quarts 3·4413

METRIC WEIGHTS.

	Systematic name.		*Old Swiss value.*		*English value.*
	1 Milligramme	=	Quint ·0002	=	Grains ·0154
10 Milligrammes	=1 Centigramme	=	·0025	=	·1543
10 Centigrammes	=1 Decigramme	=	·025	=	1·5432
10 Decigrammes	=1 Gramme	=	·256	=	15·4323
10 Grammes	=1 Dekagramme	=	2·560	=	154·3234
10 Dekagrammes	=1 Hectogramme	=	Loth 6·40	=	oz. av. 3·5273
5 Hectogrammes	=1 Pfund	=	32·0	=	17·6365
10 Hectogrammes	=1 Kilogramme	=	Pfund 2	=	lbs. av. 2·2046
100 Kilogrammes	=1 Quintal	=	200	=	220·4621
10 Quintals	=1 Ton	=	2000	=	Cwt. 19·6841

OLD SWISS WEIGHTS AND MEASURES.

OLD MEASURES OF LENGTH.

Swiss value.	*Systematic name.*	*Metric value.*	*English value.*
		Millimetres	Inches
	1 Striche	= ·3 =	·01181
10 Striche	= 1 Linie	= 3 =	·11811
10 Linien	= 1 Zoll	= 30 =	1·181123
10 Zoll	= 1 Fuss	= 300 =	11·811237
		Centimetres	Yards
2 Fuss	= 1 Elle	= 60 =	·6561789
6 Fuss	= 1 Klafter	= 180 =	1·9685395
		Metres	
10 Fuss	= 1 Ruthe	= 3 =	3·280899
1600 Ruthen	= 1 Schweizer-stunde	= Kilometres 4·800	5249·43866 Miles or 2·98263

The Geographical Mile is 7 Kilometres, 407 Metres, or 24690 Swiss Fuss. An English Yard = 3·048 Fuss; an English Foot = 1·016 Fuss; and an English Inch = 8·46 Linien.

The *Ruthe*, *Fuss*, *Zoll*, *Linie*, and *Striche*, were denoted by the marks, °, ′, ″, ‴, ⁗. The Elle was also called Brache, or Half-Staab. A *Staab* was 2 Ellen or 4 Fuss.

OLD MEASURES OF SURFACE.

Swiss value.	*Systematic name.*	*Metric value.*	*English value.*
		Sq. Metres	Sq. Feet.
100 Sq. Zoll	= 1 Sq. Fuss =	·09 =	·9687869
36 Sq. Fuss	= 1 Sq. Klafter =	3·24 =	34·876328
			Sq. Yards.
100 Sq. Fuss	= 1 Sq. Ruthe =	9 =	10·7642982
400 Sq. Ruthen or 40000 Sq. Fuss	= 1 Juchart =	Ares 36 =	4305·71928
			Acres
6400 Jucharten	= 1 Sq. Stunde =	230400 =	5693·52

OLD CUBIC MEASURES.

Swiss value.	*Systematic name.*	*Metric value.*	*English value*
		Cubic Metre.	Cubic Feet.
1000 Cubic Zoll	= 1 Cubic Fuss =	·027 =	·9535
216 Cubic Fuss	= 1 Cubic Klafter =	5·832 =	205·6662
1000 Cubic Fuss	= 1 Cubic Ruthe =	27 =	953·5476

The Cubic Klafter given in the table was used in the measurement of stone, hay, &c. The Firewood Klafter varied in cubic capacity in the different cantons; it was always 6 Fuss long by 6 Fuss high, but the width varied according to the length of the billets: it was sometimes 3 Fuss, sometimes 3½ Fuss, and sometimes 4 Fuss in width: thus in Aargau, Basel, Freiburg, and Schaffhausen, the Firewood Klafter was 6 × 6 × 3½ Fuss = 126 Swiss Cubic Fuss = 3·402 Cubic Metres; in Lucerne, Berne, Glarus, and Thurgau, it was 6 × 6 × 3 Fuss = 108 Swiss Cubic Fuss; and in Solothurn it was 6 × 6 × 4 Fuss = 144 Swiss Cubic Fuss = 3·888 Cubic Metres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Maass or Viertel was the unit of Measures of Capacity for Dry Goods. It contained exactly 30 lbs. distilled water at 39⅕° F (3½° Réaumur) or $\frac{1}{18}$ of Cubic Fuss.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Imperial Bushels.
	1 Immi	= 1·5	= ·041268
10 Immi	= 1 Viertel	= 15	= ·41268
10 Viertel	= 1 Malter	= 150	= 4·1268

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Gills
2 Achtelmaass	= 1 Schoppen	= ·375	= 2·6412
			Imperial Pints.
2 Schoppen	= 1 Halbmaass	= ·75	= 1·32058
2 Halbmaass	= 1 Maass	= 1·5	= 2·64116
			Imperial Gallons.
100 Maass	= 1 Saum	= 150	= 33·015

The Maass contained exactly 3 lbs. of distilled water at 39⅕° F. (3½° R.) or $\frac{1}{18}$ of a Cubic Fuss. The Saum was subdivided into 4 parts, each of which was called an Eimer. The Maass and its divisions and multiples were measures in the form of hollow cylinders, the depth of which was double the diameter.

OLD SWISS WEIGHTS.

The unit of Weights was the Pfund which, as is seen above, was equal to half a Kilogramme. The Pfund was divided into

16 Unzen, each Unze into 2 Loth, and each Loth into 4 Quint, as follows:—

	Systematic name.		*Metric value.* Grammes.	*English value.* lbs. Av.
4 Quint	= 1 Loth	=	15·625 =	·034447
2 Loth	= 1 Unze	=	31·25 =	·068895
16 Unze	= 1 Pfund	=	500 =	1·10233
100 Pfund	= 1 Centner	=	50000 or 50 Kilogrammes =	110·233

The Pfund was divided fractionally into *Halves*, *Quarters*, and *Eighths*, named, *Half-pfund*, *Viertel-pfund*, and *Achtel-pfund*. It was also divided into 500 Grammes, the Gramme being subdivided into Decigrammes, Centigrammes, and Milligrammes, as shown in the above table.

OLD APOTHECARIES' WEIGHTS.

Divisions.	*Systematic name.*		*Metric value.* Grammes.	*English value.* Troy Grains.
20 Grains	= 1 Scruple	=	1·30208 =	20·09455
3 Scruples	= 1 Drachm	=	3·90625 =	60·28367
4 Drachms	= 1 Loth	=	15·625 =	241·13468
2 Loth	= 1 Unze	=	31·25 =	482·26939
12 Unzen	= 1 Pfund	=	375 =	5787·23250

The Medicinal Pfund in Basle was equal to 357·58 Grammes; in Berne, Feiburg, Zuric, Zug, and Solothurn, it was equal to 357·854 Grammes; and in Lucerne it was equal to 357·951 Grammes.

ITALY.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
			Inch.
	1 Millimetro	= 1 Millimetre =	·03937079
10 Millimetri	= 1 Centimetro	= 1 Centimetre =	·3937079
10 Centimetri	= 1 Decimetro	= 1 Decimetre =	3·937079
10 Decimetri	= 1 Metro	= 1 Metre =	39·37079
			Yards.
10 Metri	= 1 Decametro	= 1 Decametre =	10·93633
10 Decametri	= 1 Ettometro	= 1 Hectometre =	109·3633
10 Ettometri	= 1 Chilometro	= 1 Kilometre =	1093·633
			Miles
10 Chilometri	= 1 Miriametro	= 1 Myriametre =	6·2138

LAND MEASURES.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Centiara = (1 Centiare or Square Metre)		Square Yards 1·1960332
100 Centiaras =	1 Ara	= 1 Are	= 119·6033
100 Aras =	1 Ellara	= 1 Hectare	= (11960·332 or Acres. Sq. Yds 2 2280·33)

CUBIC MEASURES.

Italian value.	*Systematic name.*	*Metric value.*	*English value.*
			Cubic Feet.
$\frac{1}{10}$ of a Stero =	1 Decistero	= 1 Decistere =	3·531658
10 Decisteri =	1 Stero	= 1 Stere =	35·31658
10 Steri =	1 Decastero	= 1 Decastere =	353·1658

MEASURES OF CAPACITY FOR LIQUIDS AND SOLIDS.

Italian value.	*Systematic Name.*	*Metric value.*	*English value.*
			Imperial Pints
1000th of a Cubic Decimetre =	1 Millilitro	= 1 Millilitre =	·00176
10 Millilitri =	1 Centilitro	= 1 Centilitre =	·017619
10 Centilitri =	1 Decilitro	= 1 Decilitre =	·17619
10 Decilitri =	1 Litro	= 1 Litre =	1·76195
			Imperial Gallons.
10 Litri =	1 Decalitro	= 1 Decalitre =	2·20244
10 Decalitri =	1 Ettolitro	= 1 Hecolitre =	22·02443
			Quarters
10 Ettolitri =	1 Chilolitro	= 1 Kilolitre =	3·44131

WEIGHTS.

Italian value.	*Systematic name.*	*Metric value.*	*English value.*
1000th of a Gramma	= 1 Milligramma	Milligramme = 1 =	Grains Troy ·01543
10 Milligramme	= 1 Centigramma	Centigramme = 1 =	·1543234
10 Centigramme	= 1 Decigramma	Decigramme = 1 =	1·543234
10 Decigramme	= 1 Gramma	Gramme = 1 =	15·43234
10 Gramme	= 1 Decagramma	Decagramme = 1 =	154·32348
10 Decagramme	= 1 Ettogramma	Hectogramme = 1 =	lbs. av. ·220462
10 Ettogramme	= 1 Chilogramma	Kilogramme = 1 =	2·20462
10 Chilogramme	= 1 Miriagramma	Myrigramme = 1 =	22·04621
10 Miriagramme	= 1 Quintale Metrico	Quintal Metrique = 1 =	Cwt. 1·97
10 Quintal Metrici	= 1 Tonnelata de mare	Tonneau Metrique = 1 =	19·7

Previous to the year 1859, when most of the Italian States were united to form the "Kingdom of Italy," each State had its own Weights and Measures.

OLD WEIGHTS AND MEASURES.

ROME.

OLD MEASURES OF LENGTH—(Itinerary).

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Pie =	Metre. ·2976826 =	Inches. 11·72004
5 Pie des =	1 Passo =	1·488413 =	58·60020
1000 Passos =	1 Miglio =	Kilometres. 1·488413 =	Yards 1627·7833*

* About 7 and two-fifths Furlongs, or ·925 Mile English.

The Canna d'ara divided into 9 Palmi = 44·29213 English Inches, or 1·125 Mètres.

The Braccio d'ara = 29·52809 English Inches, or ·75 Mètre.

The Palmo d'ara = 4·921347 English Inches, or ·125 Mètre.

OLD MEASURES OF LENGTH—(Mercantile).

Divisions.		*Systematic Name.*		*Metric value.*		*English value.*
				Metres.		Inches.
		1 Parto	=	·083026	=	3·268815
3 Partis	=	1 Palmo	=	·249078	=	9·806445
						Yards.
8 Palmi	=	1 Canna	=	1·99263	=	2·17921

The Mercantile Braccio = 26·3784293 English Inches, or ·670 Mètre.

The Braccio for Cloth and Linen = 25·00045 English Inches, or ·635 Mètre.

OLD MEASURES OF LENGTH—(Architects').

Divisions.	*Systematic name.*	*Metric value.*		*English value.*
		Metres.		Inches.
	1 Decimo	= ·00186	=	·0733
2 Decimi	= 1 Minuto	= ·003723	=	·146599
5 Minuti	= 1 Oncie	= ·0186178	=	·732998
12 Oncie	= 1 Palmo	= ·223414	=	8·795985
16 Oncie or 1¼ Palmi	= 1 Piede	= ·297886	=	11·72798
3 Palmi	= 1 Passo	= ·670242	=	26·387955
				Yards
5¾ Palmi	= 1 Stajualo	= 1·284631	=	1·40491
10 Palmi or 7½ Piedes	= 1 Canna	= 2·23414	=	2·44333
10 Stajuali	= 1 Catena	= 12·84631	=	14·04914

OLD MEASURES OF SURFACE.

Divisions.	*Systematic Name.*	*Metric value.*		*English value.*
		Square Metres		Sq. Yards
	1 Sqr. Catena	= 165·0276	=	197·37833
7 Sqr. Catenas	= 1 Scorzo	= 1155·1937	=	1381·648
		Ares		Acre
4 Scorzi	= 1 Quarta	= 46·207750	=	1·141856
4 Quartas	= 1 Rubbio	= 184·831	=	4·567424

The Pezza is also used in Square Measures. It is the $\frac{1}{7}$th part of a Rubbio, and therefore 7 Pezzas are equal to 1 Rubbio.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres.	Imperial Bushels.
4 Decimos	= 1 Starello	= 18·40375	= ·5063
2 Starelli	= 1 Quaterello	= 36·8075	= 1·0126
2 Quaterelli	= 1 Quarto	= 73·615	= 2·0252
2 Quarti	= 1 Rubjatelle	= 147·23	= 4·0504
2 Rubjatelli	= 1 Rubbio	= 294·46 or Hectolitres 2·9446	= 8·1008 or Quarters 1·0126

The Quarto was also divided into 5$\frac{1}{2}$ Scorzi, each of 4 Quartucci, or into 4 Starelli, each of 1$\frac{1}{2}$ Scorzi, each of 4 Quartucci

The Scorzo was equal to ·3682 British Imperial Bushel or 13·3845 Litres.

The Quartucco was equal to ·09205 British Imperial Bushe. or 3·3461363 Litres.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres.	Imperial Pints
4 Quartucci	= 1 Foglietta	= 3·64635	= ·8025495
4 Fogliette	= 1 Boccale	= 14·5854	= 3·210198
			Imperial Gallons.
32 Boccali	= 1 Barile	= 58·3416	= 12·8407921
16 Barili	= 1 Botte	= 933·4656 or Hectolitres 9·334656	205·4526736

The Barile of Oil contained 28 Boccali, and was equal to 12·651289 British Imperial Gallons, or 57·4806 Litres.

The Soma of Oil of 80 Boccali, or 2$\frac{2}{7}$ Barile, was equal to 36·14654 British Imperial Gallons, or 164·23 Litres.

The Soma was also divided in 2 Pelli (or Mastelli), each of 20 Cugnatèlli.

OLD ROMAN WEIGHTS.

Roman value.		*Systematic name.*	*Metric value.*	*English value.*
			Grammes	Troy Grains
		1 Grano	= ·049067 =	·758
24 Grani	=	1 Denaro	= 1·177625 =	18·2
24 Denari	=	1 Oncia	= 28·263 =	436·2
				lbs. av.
12 Oncie	=	1 Libbra	= 339·156 =	·74771
			Kilogrammes	
10 Libbri	=	1 Decinô	= 3·39156 =	7·4771
100 Libbri	=	1 Centinajo or Cantaro Piccolo	= 33·9156 =	74·771
10 Centinaji	=	1 Migliajo or Contaro Grosso	= 339·156 =	747·71

BOLOGNA.

OLD MEASURES OF LENGTH.

Divisions.		*Systematic name.*		*Metric value*	*English value.*
				Metres	Inches
		1 Linie	=	·002683 =	·1039
12 Linien	=	1 Zoll	=	·032 =	1·2468
12 Zoll	=	1 Pié	=	·384 =	14·9609
5 Piedos	=	1 Passo	=	1·92 =	74·8045
					Yards
10 Pié	=	1 Pertica	=	3·85 =	4·155805

The Braccio for Cloth was equal to 25·198 English Inches, or ·64 Mètre.

The Braccio for Silk measurement was equal to 23·47 English Inches, or ·594 Mètre.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Sq. Metres	Sq. Yards
	1 Sq. Pie =	·148225 —	·1727072
100 Sq. Piedes	= 1 Sq. Pertica =	14·8225 =	17·2707152
140 Sq. Pertica	= 1 Tornatura =	2075·15 or Ares 20·7515 =	2417·900128 or Acre ·49956

The Biolca was equal to ·6997 of an English Acre.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*Metric value* Litres	*English value.* Imperial Bushels
	1 Quarticino	= 2·45766	= ·067615
4 Quartucini	= 1 Quartarolo	= 9·830625	= ·27046
4 Quartaroli	= 1 Stajo	= 39·3225	= 1·08184
2 Staji	= 1 Corba	= 78·645	= 2·16368

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*Metric value.* Litres	*English value.* Imperial Gallons
	1 Fogliette	= ·3274625	= ·0720824
4 Foglietti	= 1 Boccalo	= 1·30985	= ·2883295
15 Boccali	= 1 Quartarolo	= 19·64775	= 4·3249425
4 Quartaroli	= 1 Corba	= 78·591	= 17·29977

OLD WEIGHTS.

Divisions.	*Systematic name.*	*Metric value.* Grammes	*English value.* Troy Grains
	1 Grano =	·047115 =	·727106
4 Grani	= 1 Carato =	·1884635 =	2·908427
10 Carato	= 1 Ferlino =	1·884635 =	29·08427
16 Ferlini	= 1 Unze =	30·15416 =	465·3484
			lbs. Av.
12 Unzen	= 1 Libbra =	361·85 =	·79774
25 Libbri	= 1 Peso =	9046·25 =	19·9435

OLD NEAPOLITAN WEIGHTS AND MEASURES.

The Neapolitan system of Weights and Measures (introduced 22nd April, 1840), like the Metric system, was founded upon a basis furnished by Nature.

The Quadrant of the Earth's Meridian was divided into 9 equal parts called *Degrees*, and each Degree into 60 equal parts called Minutes. One of these *Minutes* was the Neapolitan *Miglio* or Mile. The *Thousandth* part of the Miglio was the *Passo*, and the *Seventh* part of the Passo was the *Palmo*. The Palmo was the unit of Measures of Length.

OLD NEAPOLITAN MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Centesimo =	Metres ·0026455 =	Inches ·1041552
10 Centesimos =	1 Decimo =	·026455 =	1·041552
			Feet.
10 Decimos =	1 Palmo =	·26445 =	·86796
7 Palmo =	1 Passo =	1·85185 =	6·07572
10 Palmo =	1 Canna =	2·6455 =	8·6796
			Yards
1000 Passo =	1 Miglio =	185·85 or Kilometres 1·85185 =	2025·24 or Mile 1·15070

In ordinary Commercial transactions the Palmo was subdivided into 12 Oncie, the Oncia into 5 Minuti, and the Minuto into 2 Punti. The Oncia is equal to ·86796 English Inch, or ·0220458 Metre; the Minuto is equal to ·173592 English Inch, or ·004409166 Metre; and the Punto is equal to ·086796 English Inch, or ·002204583 Metre.

OLD NEAPOLITAN MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value*	*English value.*
		Square Metres.	Sq. Yards
100 Sq. Palmi =	1 Sq. Canna =	6·99867 =	8·37060624
10 Sq. Canne =	1 Sq. Decime =	69·9867 =	83·7060624
100 Sq. Canne =	1 Moggio =	699·867 =	837·060624

OLD NEAPOLITAN CUBIC MEASURES.

The unit of Cubic Measures was the Cubic Canna of 1000 Cubic Palmi. It was equal to 653·88162 Cubic Feet English. The Cubic Palmo is equal to 1129·917448 Cubic Inches English. The Cubic Canna used in the measurement of Firewood contained only 256 Cubic Palmi, and was equal to 167·39368 English Cubic Feet, or 4·739835 Cubic Metres.

OLD NEAPOLITAN MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Imperial Bushels
	1 Quarto =	13·88625 =	·38204
2 Quarti =	1 Mezzetto =	27·7725 =	·76408
2 Mezzetti =	1 Tomolo =	55·5451 =	1·52816
		Hectolitres	Imperial Quarters
36 Tomoli =	1 Carro =	19·9962 ..	6·87672

The Tomolo was also subdivived into 8 Stapelli, and each Stapello into 3 Misure. The Stapello was equal to 1·52816 Imperial Gallons, or 6·9431 Litres; and the Misure was equal to 2·037546 Imperial Quarts, or 2·3143 Litres.

OLD NEAPOLITAN MEASURES OF CAPACITY FOR LIQUIDS.

(*a*) Wine and Spirits, &c.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Imperial Gallons
60 Caraffe	= 1 Barile	= 43·625	= 9·60178
12 Barili	= 1 Botte	= 523·500	= 115·22136
2 Botte	= 1 Cano	= 1047·000	= 230·44272

(*b*) Oil.

			Litres		Imperial Gallons
	1 Misuretta	=	·42076	=	·09261
6 Misurette	= 1 Quarto	=	2·5246	=	·55566
4 Quarti	= 1 Stajo	=	10·0984	=	2·222625
16 Stajos	= 1 Salma	=	161·574	=	35·562

OLD NEAPOLITAN WEIGHTS.

(*a*) Gold, Silver, and Medicine Weights.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Grammes	Troy Grains
	1 Grano	= ·044549	= ·68752
10 Grani	= 1 Obolo	= ·34549	= 6·87521
20 Grani or 2 Oboli	= 1 Scropolo or Trappeso	= ·89099	= 13·75042
3 Scropolo	= 1 Dramme	= 2·67299	= 41·251264
10 Dramme	= 1 Oncia	= 26·7299	= 412·51264
			lbs. Av.
12 Oncie	= 1 Libbra	= 320·759	= ·70716453
100 Libbre	= 1 Cantaro Piccolo	Kilogrammes = 32·0759	= 70·7164536

(*b*) COMMERCIAL WEIGHTS.

			Grammes.		Troy Grains.
	1 Trappeso	=	·891	=	13·7504
					lbs. av.
100 Trappesi	= 1 Decime	=	89·1	=	·19643
10 Decimes	= 1 Rottolo	=	891	=	1·9643
			Kilogrammes		
100 Rottoli	= 1 Cantaro Grosso	=	89·100	=	196·430

OLD SICILIAN WEIGHTS AND MEASURES.

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*Metric value.*		*English value.*
		Metres.		Inches.
12 Linien =	1 Oncie =	·0215	=	·846767
12 Oncie =	1 Palmo =	·25809	=	10·161207
2 Palmo =	1 Pasetto =	·51618	=	20·322414
				Yards.
4 Pasetti =	1 Canna =	2·06472	=	2·25804
4 Canna =	1 Catena =	8·25888	=	9·03218
4 Catena =	1 Corda =	33·03552	=	36·128736
45 Corde =	1 Miglio =	1486·5984 or Kilometres 1·48659	=	1625·79312 or Mile ·92374

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value.*		*English value.*
		Sq. Metres		Sq. Yards.
1 Sqr. Canna =	1 Quartiglo =	4·263069	=	5·098745
4 Quartigli =	1 Quarto =	17·052274	=	20·394978
4 Quarti =	1 Carrozzo =	68·209098	=	81·579914
4 Carrozzi =	1 Mondello =	272·836395	=	326·319657
4 Mondelli =	1 Tumolo =	1091·345581	=	1305·278628
		Ares		Acres
4 Tumoli =	1 Bisacco (*a*) =	43·653823	=	1·02709
4 Bisaccos =	1 Salma (*b*) =	174·615293	=	4·10885

(*a*) was equal to 5221·114512 English Square Yards; (*b*) was equal to 20884·458051 English Square Yards.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*		*Metric value.* Litres.		*English value.* Imperial Bushels.
		1 Carozzo	=	1·07456	=	·029314
4 Carozzi	=	1 Mondello	=	4·29825	=	·117256
4 Mondelli	=	1 Tumolo	=	17·193	=	·469026
4 Tumoli	=	1 Bisacco	=	68·772	=	1·876105
4 Bisacci	=	1 Salma	=	275·088	=	7·504422

The Salma given in the table was the ordinary Salma; the Salma Grossa was equal to 9·47 British Imperial Bushels.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.		*Systematic name.*		*Metric value.* Litres.		*English value.* Imperial Gallons.
		1 Quartucco	=	·85965	=	·1892
20 Quartucci, or 4 Caroffis	=	1 Quartaro	=	17·193	=	3·783461
2 Quartari	=	1 Barile	=	34·386	=	7·566922
4 Barili	=	1 Tonna	=	137·544	=	30·267688
8 Barili	=	1 Salma	=	275·088	=	60·535376
4 Salmas	=	1 Botte	=	1100·352	=	242·141504

OLD WEIGHTS.

Divisions.		*Systematic name.*		*Metric value.* Kilogrammes.		*English value.* lb. av.
		1 Oncie	=	·026447	=	·0583
12 Oncie	=	1 Libbro	=	·317368	=	·6996
30 Oncie	=	1 Rottolo	=	·79342	=	1·7492
100 Rottoli	=	1 Cantaro	=	79·342	=	174·92

The Last was 25 Cantaros. The Rottolo and Cantaro of this table were the Rottolo and Cantaro Sottile.

The Rottolo Grosso had 33 Oncie, and was equal to 1·923 lbs. av. English, or ·87276 Kilogrammes.

The Cantaro Grosso was equal to 192·3 lbs. av. English, or 87.276 Kilogrammes.

In Messina Oil was sold by the Caffiso, equal to 2·602042 British Imperial Gallons, or 11·82 Litres, and was reckoned by weight at 12½ Rottoli Grossi, or 24·037 lbs. av. English.

In Palermo, Oil was sold by the Cantaro Grosso.

OLD WEIGHTS AND MEASURES OF TUSCANY.

Divisions.		*Systematic name.*		*Metric value*		*English value.*
		1 Punto	=	Metres. ·000202	=	Line. ·124078
12 Puntos	=	1 Denaro	,,	·002431	,,	1·48892
12 Denari	,,	1 Soldo	,,	·029181	,,	Inches 1·148892
10 Soldi	,,	Palmo	,,	·291815	,,	11·48892
20 Soldi or 2 Palmi	,,	1 Braccio de Panno	,,	·58365	,,	Feet 1·91482
2 Braccias	,,	1 Pasetto	,,	1·16730	,,	3·82964
4 Braccias de Panno	,,	1 Canna (Commercial)	,,	2·33460	,,	7·65928
5 Braccias de Panno	,,	1 Canna (Surveyors')	,,	2·91825	,,	9·5741
2833⅓ Braccias de Panno	,,	1 Miglio	,,	1653·675	,,	Yards 1808·443 or Miles 1·0275
4 Miglia	,,	1 Post Miglio	,,	6614·700 or Kilometres. 6·6147	,,	4·11

The Braccio de Panno was also subdivided into 12 Crazie, and the Soldo into 3 Quatrini of 4 Denari. The Crazie was 5 Quatrini or 20 Denari, and was equal to 2·48153 English Inches. The Braccio, used by Architects and Surveyors, was a little shorter than the Braccio de Panno. It was equal to 1·8 English Foot.

OLD MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value* Square Metres	*English value.* Square Yards
	1 Sqr. Braccio =	·340646 =	·4073928
100 Sqr. Braccias =	1 Tavolo ,,	34·0646 ,,	40·7392848
100 Tavolos ,,	1 Quadrato ,,	3406·46 or Ares 34·0046 =	4073·92848 or Acre ·84178

100 Quadratos were equal to 84·178 English Acres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*Metric value* Litres	*English value.* Imperial Pints
	1 Bassolo =	·190344 =	·3352
2 Bassoli	= 1 Quartucco ,,	·380689 ,,	·6704
2 Quartucci	,, 1 Mazetta ,,	·761379 ,,	1·3408
2 Mezette	,, 1 Mettadella ,,	1·522679 ,,	2·6816
4 Metadelle or 8 Mezette	,, 1 Quarto ,,	6·090715 ,,	10·7264
			Imperial Bushels
2 Quarti	,, 1 Mina ,,	12·181431 ,,	·33520
2 Mine	,, 1 Stajo ,,	24·362862 ,,	·67040
3 Staja	,, 1 Sacco ,,	73·088586 ,,	2·01120
8 Sacci	,, 1 Moggio ,,	584·708688 ,,	16·08960 or Imp. Quarters 2·01120

OLD MEASURES OF CAPACITY FOR LIQUIDS—
(WINE, &c.)

Divisions.	*Systematic name.*	*Metric value* Litres	*English value.* Imperial Pints
	1 Quartucco =	·2849 =	·50164
2 Quartucci =	1 Mezzetta ,,	·5698 ,,	1·00328
2 Mezzette ,,	1 Boccale ,,	1·1396 ,,	2·00656
			Imperial Gallons.
2 Boccali ,,	1 Fiasco ,,	2·2792 ,,	·50164
20 Fiasci ,,	1 Barile ,,	45·584 ,,	10·03289
9⅓ Barile ,,	1 Pipa ,,	440·389 ,,	96·9846

OLD WEIGHTS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Grammes	Troy Grains.
	1 Grano	= ·0491235 =	·75804
24 Grani	= 1 Denaro	„ 1·178965 „	18·193
3 Denari	„ 1 Dramma	„ 3·536895 „	54·581
8 Dramme	„ 1 Oncia	„ 28·295166 „	436·54
			lbs. av.
12 Once	„ 1 Libbra	„ 339·542 „	·74855
		Kilogrammes.	
100 Libbre	„ 1 Cantaro	„ 33·954 „	74·855
10 Cantaros	„ 1 Migliajo	„ 339·54 „	748·55

In round numbers the Tuscan Libbra was nearly 12 oz. av. It was nearly 11 oz. Troy.

The *Medicinal Weights* were the Libbra of 12 Once; the Oncia of 8 Dramme; the Dramma of 3 Scrupoli; the Scrupolo of 24 Grani; and the Grano. Thus, the *Medicinal* Libbra contained 6912 Tuscan Grani. The Libbra of Lucca was only a few grains heavier than the Tuscan Libbra.

OLD WEIGHTS AND MEASURES OF LOMBARDY.

Length.—The Metro or Braccio of 10 Palmi, each of 10 Diti. each of 10 Atomi = 39·37079 English Inches or 1 Mètre, The Miglio of 1000 Metri = 1093·63 English Yards or 1 Kilometre. *Surface.*—The Tornatura of 100 Square Palmi = 119·6033 English Square Yards. It is the Italian Ara or the French Are. *Capacity.*—The Pinta of 10 Coppi = 1·7608 British Imperial Pint. It is the Italian Litro or the French Litre. The Mina of 10 Pinti is the Italian Decalitro or French Decalitre, and the Soma of 10 Mine is the Italian Hectolitro or French Hectolitre. The Mina = 2·2096, and the Soma 22·096 British Imperial Gallons. *Weights.*—Libbra Metrica of 10 Oncie, each of 10 Grossi, each of 10 Denari, each of 10 Grani, is the Italian Chilogramma or the French Kilogramme, and = 2·20466 lbs. av. English. The Rubbo of 10, and the Quintale of 100 Libbri.

OLD WEIGHTS AND MEASURES OF SARDINIA—(ISLAND OF).

Divisions.		*Systematic name.*		*Metric value*		*English value.*
				Metres.		Inches.
		1 Palmo	=	·2625	=	10·33483
						Yards
8 Palmi	=	1 Canna	,,	2·1	,,	2 296629
12 Palmi	,,	1 Trabucco	,,	3·15	,,	3·444944

The Surface Measures are the Squares of the Measures of Length.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres.		Imperial Gallons
		1 Quarte	=	24·5875	=	5·411626
2 Quarte	=	1 Starello	,,	49·175	,,	10·823253

OLD MEASURES OF CAPACITY FOR LIQUIDS.

(Wine, Brandy, &c.)

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres.		Imperial Pints
		1 Metzze	=	·50266	=	·88507
2 Metzze	=	1 Pinte	,,	1·00532	,,	1·77014
5 Pinte	,,	1 Quartiere	,,	5·0266	,,	8·8507

The Quartana of 12 Quartucci = 7·395248 Imperial Pints English, or 4·2 Litres.

OLD MEASURES OF CAPACITY FOR LIQUIDS—(Oil).

Divisions		*Systematic name*		*Metric value*		*English value.*
				Litres		Imperial Gallons.
		1 Misuro	=	·175	=	·03851
2 Misuri	=	1 Quartucco	,,	·350	,,	·07703
12 Quartucci	,,	1 Quartana	,,	4·2	,,	·924405
4 Quartane	,,	1 Giarro	,,	16·8	,,	3·69762
2 Giarri	,,	1 Barile	,,	33 6	,,	7·39524

OLD WEIGHTS.

Divisions.		*Systematic name.*		*Metric value*		*English value.*
				Grammes		Troy Grains
		1 Sediceno	=	2·1134	=	32·61455
2 Sediceni	=	1 Ottavo	,,	4·2268	,,	65·2291
2 Ottavi	,,	1 Quarto	,,	8·4535	,,	130·4582
						lbs. av.
4 Quarti	,,	1 Oncia	,,	33·8141	,,	·0745475
12 Once	,,	1 Libbra	,,	405·77	,,	·89457
				Kilogrammes		
100 Libbre	,,	1 Cantaro	,,	40·577	,,	89·457

MALTA.

MEASURES OF SURFACE.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Metres		Inches.
		1 Piede	=	·28363	=	$11\frac{1}{8}$
		1 Oncia	=	·02175	=	·856314
12 Once	=	1 Palmo	=	·261	=	10·275776
4 Palmi	=	1 Misura	=			41·10310
						Yards
8 Palmi	=	1 Canna	=	2·088	=	2·2835

The following approximate equivalents are generally assumed in Commercial dealings.

1 Palmo = $10\frac{1}{3}$ English Inches = ·33365 French Metre.

1 Tratto = 24 English Inches = ·609576 French Metre.

1 Measure = 42 English Inches = 1·066758 French Metre.

1 Canna = 84 English Inches = 2·133516 French Metre.

7 Canne = 48 English Feet = 14·630112 French Metre.

120 Palmi = 103 English Feet = 31·393782 French Metre.

In round numbers $3\frac{1}{2}$ Palmi are reckoned equal to 1 English Yard; or $2\frac{1}{4}$ English Yards are equal to 1 Canna.

MEASURES OF SURFACE.

Divisions.	*Systematic Name.*	*Metric value.*	*English value.*
	1 Sq. Poltice =	Sq. Metres ·000473 =	Square Feet ·00509218
144 Sq. Poltice =	1 Sq. Palmo ,,	·068121 ,,	·73327483
64 Sq. Palmi ,,	1 Sq. Canna ,,	4·359744 ,,	46·929589
			Square Yards.
4½ Sq. Canne ,,	1 Misura ,,	20·926771 ,,	25·0291142
10 Misuras ,,	1 Mondello ,,	209·26771 ,,	250·291142
		Ares.	
6 Mondelli ,,	1 Tumulo ,,	12·5560626 ,,	1501·746852
		Hectares	Acres
16 Tumuli ,,	1 Salma ,,	2·008970016 ,,	4·964

543 Square Palmi are usually reckoned equal to 400 English Square Feet, and 16 Salmi or 256 Tumuli to 71 English Acres.

CUBIC MEASURES.

The following approximate equivalents are generally assumed in Commercial dealings:—

1 Cubic Tratto = 8 English Cubic Feet.

144 Cubic Palmi = 96 English Cubic Feet.

1 Cubic Canna = 343 English Cubic Feet.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*Metric value*	*English value.*
		Litres.	Imperial Bushels
	1 Mondello	= 3·0052 =	·082679
6 Mondelli =	1 Tummolo	,, 18·03125 ,,	·496077
16 Tummoli ,,	1 Salma ("struck")	,, 288·5 ,,	7·937237

The "heaped" Salma, which is used in measuring Beans, Herbs, Lentils, Indian Corn, Linseed, Hempseed, Canary Seed, Salt, and Charcoal, is about 16 per cent. greater than the Salma of "struck" measure. It is therefore equal to about 334·66 Litres, or 9·20719492 English Imperial Bushels.

The following approximate equivalents are generally assumed in all Commercial dealings:—

100 Tummoli (heaped)	= French Litres. 254·435272	=	57	British Impl. Bushels	
400 Tummoli (struck)	,, Hectolitres. 716·525512	,,	197	,,	,,
35 Salmi (heaped)	,, 116·313267	,,	40	,,	Quarters
203 Salmi (struck)	,, 581·566336	,,	200	,,	,,

MEASURES OF CAPACITY FOR LIQUIDS.*

Divisions.		*Systematic name.*		*Metric value.* Litres		*English value.* Imperial Pint
4 Gills	=	1 Pint	=	·473125	=	·833111
						Imperial Gallon.
2 Pints	,,	1 Quart	,,	·94625	,,	·208277
4 Quarts	,,	1 Gallon	,,	3·785	,,	·833111

The Maltese Wine Barrel is equal to 9·35 British Imperial Gallons, or 42·027 Litres.

In Oil measure the unit is the *Cafico*, equal to 4⅝ English Imperial Gallons, or 19·87773 Litres, and weighs 40 lbs. Avoirdupois.

A Barrile of Oil of 2 Cafici is equal to 8¼ English Imperial Gallons, or 39·755461 Litres.

6 Wine Gallons are equal to 5 English Imperial Gallons = 22·717435 French Litres.

1 Cafico of Oil is equal to 4½ English Imperial Gallons = 20·445691 French Litres.

130 Barrile of Wine are equal to 1216 English Imperial Gallons = 5524·880192 French Litres.

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* These are the Old British Wine Measures that were superseded by the British Imperial Measures. The Gallon contained 231 Cubic Inches. Of such Gallons, 10 made an Anker; 18 a Rundlet; 42 a Tierce; 63 a Hogshead; 84 a Puncheon; 126 a Pipe or Butt; and 252 a Tun.

WEIGHTS.

Divisions.		*Systematic name.*		*Metric value.* Grammes		*English value.* Grains Troy
	1	Grano*	=	·045805	=	·7069
18 Grani	= 1	Crapeso*	=	·82449	=	12·7239
2 Crapesi	= 1	Parto*	=	1·64898	=	25·4479
16 Parti	= 1	Oncia*	=	26·3838	=	407·16
12 Once	= 1	Libbra*	=	316·606	=	4886
						lbs. av.
2½ Libbra	= 1	Rotolo†	=	791·515	=	1·745
				Kilogrammes		
100 Rotoli	= 1	Cantaro†	=	79·1515	=	174½
114 Rotoli	= 1	Quintal	=	93·2326	=	199

The following approximate equivalents are generally assumed in Commercial dealings :—

						French Grammes
14	English ounces av.	=	15	Maltese Oncie	=	396·89387
28	,, ,,	=	1	Rotolo	=	791·515
						Kilogrammes
7	,, lbs.	=	4	Rotoli	=	3·175147
112	,, ,, ,,	=	64	Rotoli	=	50·802416
175	,, ,, ,,	=	1	Cantaro	=	79·37868
199	,, ,, ,,	=	1	Quintal	=	90·264907
5	,, Tons ,,	=	64	Cantari	=	5080·241602

The Rotolo and half-Rotolo are the weights used in all small dealings.

TURKEY.

MEASURES OF LENGTH.

Turkish value.		*Systematic name.*	*Metric value.* Metres.	*English value.* Inches.
	1	Kerât	= ·0285744 =	1⅛
24 Kerâts	= 1	Pike or Drâ	= ·6857876 =	27
			Kilometers	Miles
	1	Berri	= 1·671492 =	1·038636
3 Berri	1	Agatsch or Forsang	= 5·01447 =	3·11591

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* Weights for Gold, Silver, and Precious Stones.

† Commercial Weights.

There are in common use three kinds of Pike, viz., the Drâ, given in the table, and equal to $\frac{3}{4}$ of an English Yard; the greater Pike called the *Halebi* or *Archim* (used by Surveyors) = 27·9 English Inches, or ·7086472 Mètre; and the little Pike or *Endassé* = 25·68816 English Inches, or ·6528 Mètre.

The Reed used by Land Surveyors is 5½ Halebis. The Halebi is used for Silk and Woollen goods, and the Endassé for Cotton goods and Carpets. There are also the Shibher or Span, and the Fitneh or span of the thumb and forefinger, and the Kuddun or pace.

In several parts of the Ottoman Empire, Itinerary distances are estimated by the time taken to walk them. Thus there is the "hour," which varies from 2¾ to 4 miles. But this mode of reckoning distances is not peculiar to Turkey or the East. It is very usual to speak of a place as being *so many minutes* or *hours* distant.

MEASURES OF SURFACE.

Turkish value.		*Systematic name.*		*Metric value*	*English value.*
				Square Metres	Square Feet
256 Sqr. Kerâts	=	1 Sqr. Pike	=	·50218085	= 5·405625
					Square Yards.
30¼ Sqr. Pikes	=	1 Sqr. Reed	=	15·19072083	= 18·168905

The general Measure for Land is the *Feddan*, an indefinite measure signifying as much as a yoke of oxen can plough in one day. On the large plains, a Feddan is used to express as much land as 4 yoke of oxen can plough in one day.

MEASURES OF CAPACITY FOR DRY GOODS.

Turkish value.		*Systematic name.*		*Metric value.*	*English value.*
				Litres	Imperial Gallon
900 Dirhems or 12 Okiejehs	=	1 Rottol	=	1·60318	= ·3528145
					Imperial Bushels
5½ Rottols	=	1 Sa	=	8·8175	= ·24256
2 Sa	=	1 Jubbeh	=	17·635	= ·48512
2 Jubbehs	=	1 Killow	=	35·27	= ·97024
4 Killows	=	1 Fortin	=	141·08	= 3·88096

100 Killows are equal to 12·128 British Imperial Quarters, or 35·266 Hectolitres. The Killow is the chief measure for Grain, the lower measures being definite weights rather than measures. By the law of 17th November, 1841, the Killow of Constantinople was made the only legal Killow of the whole Empire, and the Killow of Smyrna and that of Salonica were abolished. 2 Killows of Smyrna, or 1 of Salonica were equal to 3 of Constantinople nearly.

MEASURES OF CAPACITY FOR LIQUIDS.

Turkish value.		*Systematic name.*	*Metric value.*		*English value.*
			Litres		Imperial Pints
		1 Okiejeh	= ·1190	=	·20945
5½ Okiejehs	=	1 Oka	= ·6545	=	1·151975
12 Okiejehs	=	1 Rottol	= 1·4280	=	2·5134
					Imperial Gallons
8 Oke	=	1 Almud	= 5·234	=	1·151975
100 Rottols	=	1 Cantar	= 142·80	=	31·417

The Liquid Measures, like the Measures of Dry Capacity, take their names from Weights; they are in fact vessels which contain definite weights of water at a given temperature. Thus, for instance, the Oka is a measure holding an Oka-weight of pure water at a fixed temperature. It is used as a Measure of Capacity for all kinds of liquids throughout the empire. For Oil the Tarré is in some places 16, and others 28 Oke.

WEIGHTS. (Commercial).

Turkish value.		*Systematic name.*	*Metric value.*		*English value.*
			Grammes		lbs. av.
		1 Dirhem	= 3·21385	=	·0070854
100 Dirhems	=	1 Okiejeh	= 321·385	=	·708543
			Kilogrammes		
4 Okiejehs	=	1 Oke	= 1·28554	=	2·83418
44 Okes or 100 Rottolos	=	1 Cantar	= 56·56378	=	124·70392

The Rottolo is equal to 1·247093 lb. av. English, or 565·6378 Grammes.

WEIGHTS FOR GOLD, SILVER, AND PRECIOUS STONES.

The unit of these Weights is the Chequee or Chekey, which is the fourth-part of an Oka, and is equal to about 4950 Troy Grains, or 11·316 oz. av. The Chequee or Chekey is divided into 100 Dirhems, each of 16 Karas, and each Kara of 4 Grains, as follows:—

Turkish value.	*Systematic name.*	*Metric value.* Grammes	*English value.* Troy Grains
1 Grain		= ·04994 =	·7707
4 Grains	= 1 Kara	= ·19976 =	3·0828
16 Karas	= 1 Dirhem	= 3·1962 =	49·325
100 Dirhems	= 1 Chequee or Chekey	= 319·62 =	4932·5

APOTHECARIES' WEIGHTS.

Under a decree of December, 1872, the Metric system of Weights is used for Pharmacy in Turkey.

CANDIA.

In the Island of Candia, which forms a Pashalic of Turkey, the denominations of Weights and Measures are nearly the same as in Turkey, with some slight local difference in value.

MEASURES OF LENGTH.

The Pike or Drâ is equal to 25½ English Inches, or ·70833 Mètres.

MEASURES OF SURFACE.

The Dennum is equal to about 40 Square Yards, or 33·44388 Square Mètres.

MEASURES OF CAPACITY FOR LIQUIDS.

Mistach for Oil is equal to about 3 British Imperial Gallons, or about 13·631 Litres.

The Mistach for Wine varies from 3 to 5 Gallons, or from 13·631 to 22·717 Litres.

MEASURES OF CAPACITY FOR DRY GOODS.

The Carza is equal to about 4·19 British Imperial Bushels, or 152·297684 Litres.

WEIGHTS.

The Oka is equal to about 2¾ lbs. av., or 801·69 Grammes. The Cantar of 44 Okes is equal to about 126 lbs. av. English, or 35·27436 Kilogrammes.

GREECE.

ROYAL* MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*Metric value*	*English value.*
			Inches
$\frac{1}{1000}$th of the Pecheus	= 1 Gramme	=1 Millimètre =	·03937079
10 Gramma	= 1 Daktylas	=1 Centimètre =	·3937079
10 Daktylor	= 1 Palame	=1 Décimètre =	3·937079
10 Palamai	= 1 Pecheus	=1 Metre	=39·37079

ROYAL MEASURES OF DISTANCE.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
			Yards
1000 Pecheis	= 1 Stadion	= 1 Kilometre =	1093·633
			Miles
10 Stadia	= 1 Skoinis	= 1 Myriametre =	6·2138

ROYAL MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value.*	*English value*
			Sq. Yards
	1 Sq. Pecheus	=1 Sq. Metre =	1·196033321
100 Sq. Pecheis	=1 Stremma	=1 Are	=119·603321

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* These Weights and Measures are called "Royal" to distinguish them from those of Constantinople, which were formerly used in Greece. The "Royal Weights and Measures" were introduced in accordance with an ordinance dated 26th October, 1836. Tablets showing the difference between the new and old systems were put up at all workshops and public markets during the year following the introduction of the new system.

ROYAL MEASURES OF CAPACITY FOR DRY GOODS AND LIQUIDS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
			Imperial Pints
$\frac{1}{1000}$th of a Cubic Pecheus	=1 Kybos	=1 Millilitre	= ·00176077
10 Kyboi	=1 Mystron	=1 Centilitre	= ·01760773
10 Mystra	=1 Kotylê	=1 Décilitre	= ·176077339
10 Kotylai	=1 Litra	=1 Litre	= 1·760773395
			Imperial Gallons
100 Litrai	=1 Koilon	=1 Hectolitre	=22·00966744

The Koilon is a measure whose capacity is equal to that of a hollow cube described on the Palame, or $\frac{1}{15}$th of the Pecheus.

WEIGHTS.

I.—Gold, Silver, and Precious Stones.

Divisions.	*Systematic Name.*	*Metric value.*	*English value.*
			Troy Grains
	1 Kokkos	=1 Centigramme	= ·154323488
10 Kokkoi	= 1 Obolos	=1 Decigramme	= 1·54323488
10 Oboloi	= 1 Drachmé	=1 Gramme	= 15·4323488

II.—Commercial.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
			lbs. Av.
1500 Drachmai	= 1 Mnâ	= 1½ Kilogramme	= 3·30699

III.—Weights for Great Bulks.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
			lbs. Av.
100 Mnâi	= 1 Talanton	= 1½ Quintal	=330·699
			cwt.
10 Talanta	= 1 Tonos	= 1½ Tonneaux	= 29·52669

The unit of weight is the Drachmé. It is equal to the specific weight of the Kybos, that is to the weight of a Kybos ($\frac{1}{1000}$th part of a Litra) of pure water.

APOTHECARIES' WEIGHT.

Divisions.	*Systematic name.*	*Royal Weight.* Royal Drachmai	*English value* Troy Grains
	1 Kokkos =	·0625 =	·9645218
20 Kokkoi =	1 Sitarion =	1·25 =	19·290436
3 Sitaria =	1 Drachmé =	3·75 =	57·871308
8 Drachmai =	1 Ouggia =	30 =	462·970464
12 Ouggiai =	1 Litra =	360 =	5555·645568

The difference between the Weights and Measures given in the above tables, and those of Constantinople, which were in use in Greece until October, 1836, is as follows :—

I.—LENGTH.

The Royal Pecheus is equal to 1·5432 of the little Pecheus of Constantinople.

The Little Pecheus of Constantinople is equal to ·648 of the Royal Pecheus, and the great Pecheus of Constantinople is equal to ·669 of the Royal Pecheus.

The old Pecheus used by Surveyors, Builders, and Carpenters, is equal to ·75 of the Royal Pecheus.

One Standard Measure exists throughout the whole of the kingdom ; this consists of a rod of steel or brass, upon which is shown the length of the Royal Pecheus.

II.—SURFACE.

The Royal Square Pecheus is equal to 2·381 Square Pecheis (Pikes) of Constantinople.

The Royal Stremma is equal to 238·1 Square Pecheis of Constantinople, or to ·787 of the old Peloponnesian Stremma, or to 1778 of the old Square Pecheis used by Surveyors and Builders, each of such old Square Pecheis (Surveyors) being equal to ·5625 of the Royal Square Pecheus.

The old Peloponnesian Stremma of 3025 Square Pecheis is equal to 1·27 of the Royal Stremma.

III.—CAPACITY.

The Royal* Litra is equal to ·03015 of the old Koilon. The old Koilon is equal to 33·16 Litra.

IV.—WEIGHTS.

The Royal Mnâ is equal to 1·1719 of an Oka, (which is equal to 468¾ old Dramia.) The Oka is equal to ·8533 of the Mnâ.

THE IONIAN ISLANDS.

(CORFU, SANTA MAURA, CEPHALONIA, ZANTE, CERIGO, ITHACA, AND PAXO.)

The Weights and Measures are the same as those of Greece.

While the Islands were under the protection of Great Britain (1815 to 1864) the British Weights and Measures, with Italian names, were those in use.

The *Piede* was the Foot; the *Jarda* was the Imperial Yard; the *Carnaco* was the Pole; the *Stadio* was the Furlong; the *Gallone* was the Imperial Gallon; the *Chilo* was the Bushel; the *Dicotilo* was the Imperial Pint; the *Libra Grossa* was the lb. Avoirdupois; the *Libra Sottile* was the lb. Troy; and the *Tolonto* was 100 lbs. av.†

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* Litra is equal to ⅔ of an Oka, and 1½ Litrai is equal to 1 Oka.

† Previous to the period of British protection, the Measures were the Zante Cloth Braccio of 217·18 Inches, and Silk Braccio equal to 25·37 Inches; the Zante Barile equal 14·68 British Imperial Gallons; the Corfu Barile equal to 15 British Imperial Gallons; the Corfu Moggio, (Grain measurement) of 8 Misure equal to 4·65 British Imperial Bushels; the Moggio (Land Measure) of 8 Misure or 24 Zappade equal to 2 Acres 1 Rood 24 Perches English; the Quintal of 44 Okes equal to 125·15 lbs. Avoirdupois; and 10 Okes equal to 28 lbs. av.

CHINA.

MEASURES OF LENGTH.

Chinese value.		*Systematic name.*	*Metric value.*	*English value.*
			Metres	Inches
		1 Fun*	= ·003581	= ·141
10 Fun	=	1 Tsun	= ·035813	= 1·41
10 Tsun	=	1 Chih	= ·358133	= 14·1
				Feet.
10 Chih	=	1 Chàng	= 3·58133	= 11¾
10 Chàng	=	1 Yin	= 35·8133	= 117½

In the tariff settled by treaty between Great Britain and China, the Chih equal to $14\frac{1}{10}$ English Inches (the Canton Customs' Chih) has been adopted as the legal standard. It is the legal measure at all the Ports of trade; its use is becoming more general, and it may be ultimately adopted as the universal standard of length. At present, however, the length of the Chih varies at different places and in different trades at the same place.

Tradespeople use two Chih sticks, varying in length from $\frac{1}{2}$th to $\frac{1}{3}$rd of an inch, the longer for wholesale, and the shorter for retail transactions.

The length of the *Chang*, or any other multiple of the Chih, varies with the length of the Chih chosen as the unit. Thus, the Chang of the treaty (above mentioned) is equal to 141 English Inches, or 3·58133 Mètres. At Shanghai the Chang varies from 125 to 129 Inches, or from ·317495 to ·327654 Mètre.

In the North of China (Pekin, Tientsin, &c.), the Chihs in most general use are the Carpenters' and the Mercers' Chihs, equal respectively to 12·35 and 13·7 English Inches, or to ·313684, and ·347973 Mètre.

The following table shows the length of the Chih in different dynasties:

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* The length of a Millet Seed with the ends dressed off.

Dynasty.	Date.	Chih.	English value. Inches.	Metric value. Metre.
Hwangti*	B.C. 2697—1766	Chih	10·0592	·255499
Shang ..	B.C. 1766—1122	Chih	12·8541	·328065
Chan ..	B.C. 1122— 249	Chih	8·04739	·204400
Han ..	B.C. 202-A.D. 221	Chih	11·17717	·283894
Tang ..	A.D. 618— 907	Long Chih	12·58415	·319631
Tang ..	A.D. 618— 907	Short Chih	10·05924	·255500
Sung ..	A.D. 960—1280	Chih	10·05924	·255500
Ming ..	A.D. 1368—1644	Chain Chih	13·422	·340912
Ming ..	A.D. 1368—1644	Tong-Chih	12·8754	·327029
Ming ..	A.D. 1368—1644	Kish-Chih	12·58415	·319631
Tsing ..	1644	Present Official Chih†	12·58415	·319631

* The Chinese call him the grandson of Noah, and ascribe to him the invention of the Mariners Compass.

† But the standards themselves are not uniform, for a standard *Chih* received at Shanghai in 1844, was only equal to 12·5288 inches.

The variations in the length of the Chih at different places and in different trades will be seen from the following tables :—

PEKIN.

	English value Inches	*Metric value.* Metres
Tailors' Chih in the South part of the City ..	13·58	= ·344925
Chih used by Traders in Silk	13·46	= ·341877
Chih used by Tailors in the North part of the City	13·42	= ·340861
Tailors' Chih, acccording to Du Halde ..	13·216	= ·335680
Chih of the Tribunal of Mathematics ..	13·118	= ·333191
Land Surveyors Chih, *liang-ti-chih* ..	12·875	= ·327019
Common Chi ..	12·68	= ·322066
Registrar of Lands Chih	12·598	= ·319983
Architects', Traders', &c. Chih	12·585	= ·319653
Chih of the Palace ..	12·468	= ·316681
Chih of Imperial Statistics	12·40	= ·314954
Chih of the Board of Public Works ..	12·34	= ·313430
Chih used in the Works of the Palace ..	12·17	= ·309112

AMOY.

Tailors', Painters', and Mercers' Chih ..	12·08 to 12·24	= ·306816 to ·310890
Common Chih (or foot rule)	12·1	= ·307334
Custom House Chih, for Junks	11·832	= ·300527
Carpenters' Chih in 1680,	11·832	= ·300527
Goldsmiths' Chih in 1680,	11·26	= ·285998
Carvers' Chih ..	11·674	= ·296511

CANTON.

	English value. Inches.	*Metric value.* Metres
Tailors' Chih, called *pai-tsien-chih*	14·685	= ·372992
Mercers' Chih, for wholesale purchases	14·66 to 14·724	= ·372359 to ·373982
Merchants' Chih, for retail sales ..	14·37 to 14·56	= ·364991 to ·369817
Merchants' Chih in 1751, by Toreen ..	14·212	= ·360978
Merchants' Chih in 1751, by Osbeck ..	14·64	= ·371849
Architects' Chih ..	12·7	= ·322574

CHANG CHAU (near Amoy.)

Land Measure Chih	14·035	= ·356482
Velvet Weavers' Chih, or *Ta Chih*	13·75	= ·349243
Mercers' & Cloth Dealers' Chih, or *Chang-tsai-Chih*	12·24	= ·310890
Tailors' Chih, or *Hia-tsai-Chih*	12·10	= ·307334
Stone Cutters' and Masons' Chih, or *Lú-pán-Chih*	11·793	= ·299536
Dyers' Chih	11·674	= ·296514
Junk Builders' Chih	11·388	= ·289249
Retailer of Cloth & Silks' Chih	11 to 11·1	= ·279394 to ·281934

CHIHMA (between Chang Chau and Amoy).

Custom House Chih	12·71	= ·322828

CHINHAI (near Ningho).

Tailors' & Traders' Chih	13·7	= ·347973
Artisans' Chih, or *Fuh-Kien-i-Chih* ..	12·44	= ·315970
Stone Cutters', or *Lu-pan-Chih* ..	10·9	= ·276854

FUH CHAU.

	English value. Inches	*Metric value* Metres
The *Mong King Chih*	16·85	= ·427982
Tailors' Chih, or *Tsai-fung Chih*.. ..	15	= ·380998
The King Chih ..	13·4 to 13·7	= ·340353 to ·347973
The Kian Chih ..	12·75	= ·323844
Shoemakers' Chih, or *Hwa-tien-Chih* .	12·24 to 12·3	= ·310890 to ·312420
Silk Dealers' Chih	12	= ·304794
Cloth Dealers' Chih, or *Kang-Kien-Chih* .	11·83 to 11·93	= ·300476 to ·303016
Stone Cutters' Chih, or *Lú-pán-Chih* ..	11·79 to 11·83	= ·299460 to ·300476
The Tien Chih ..	11·18	= ·283966
The Tang-tien-Chih	10 748 to 11·55	= ·272994 to ·293364

MACAO.

Tailors' Chih ..	14·64 to 14·685	= ·371849 to ·372992
Silk Mercers' Chih..	14·66	= ·372359
Interior Customs transit duty Chih ..	14·586	= ·370477
Traders' Chih for Retail	14·212 to 14·4	= ·360978 to ·365753
Small Dealers' Chih, or *Kin-wú-Chih* ..	13 94	= ·354069
Artisans' and Masons' Chih	13·46 to 13·94	= ·341877 to ·354069
Braziers', Joiners', and Coopers' Chih ..	12·4	= ·314954

MAIMAICHIN.

Chih for purchases..	13·976	= ·354984
Chih used in Sales to Mongols	13·779	= ·349980
Russian Merchants' Chih (in 1824)	13·203	= ·335350

MANILLA.

	English value Inches		*Metric value* Metres
Chinese Carpenters' Chih	13·818	=	·350970

NANCHANG (in Kiang-su).

Traders' Rule ..	14·45	=	·367023

NANKIN.

Traders' Rule ..	13·957	=	·353993

NINGHO.

Chih, called *Ta-yih-tsun-Chih* (11 tsun) ..	15·079	=	·382999
Chih, called *Ta-wu-fun-Chih* (10½ tsun) ..	14·37	=	·364991
Tailors' Chih, or *Tsai-fung-Chih* 1846	14·098	=	·358082
Tsai-fung-Chih 1858	13·75	=	·349243
Fur, Cloth, and Felt Dealers' Chih ..	13·7 to 13·92	=	·347973 to ·353561
Silk dealers' Chih, or *Shi-chang-mai mai Chih* the Market Chih..	13·75	=	·349243
Common Chih, the *Kwan-tsi-Chih* ..	13·7	=	·347973
Statute Rule in Customs, or *Pú-pán-Chih* ..	12·7	=	·322574
Ship Builders Chih .	11·93	=	·303016
Stone Cutters' Chih, or *Lú-pán-Chih* ..	10·95 to 10·99	=	·278124 to ·279140
Carpenters' Chih ..	9·92	=	·251963

SHANGHAI.

Junk Builders' Rule *Tsungming-i-Chih*	15·69 to 15·769	=	·398518 to ·400525
Custom House Chih, or *Haikwan Chih*	14·098	=	·358082
Tailors' Chih, or *Shanghai-i-tsai-Chih*	13·85 to 14·05	=	·351783 to ·356863

SHANGHAI—*continued.*

	English value. Inches.		*Metric value.* Metres
Land Measure Chih of Board of Revenue	13·181	=	·334791
Artisans Chih, or *Fuh-Kien-i-Chih* (8 tsun)	12·569	=	·319246
Carpenters' Chih ..	11·14	=	·282950
Masons' Chih, or *Lú-pán-Chih*	10·9 to 11·08	=	·276854 to ·281426

SHANSI.

Tailors' Chih ..	14·55	=	·369563

TIENTSIN.

Carpenters' common Chih	12·35	=	·313684
Mercers' Silk and Cloth Chih	13·7	=	·347973

TINGHAI.

Traders' or Tailors' Chih	13·7	=	·347973
Joiners' Chih ..	10·9	=	·276854
Masons' Chih ..	10·63	=	·269997

1 Yard English = at Canton, 2 Chih 4 Tsun; at Shanhai, 2 Chih 5 Tsun; by the Treaty, 2 Chih 5 Tsun 5·5 Fun.

The *Pih* is a Cloth measure of about 3 Chang, and is equal to 35¼ Feet English, or 11·75 Yards nearly.

MEASURES OF DISTANCE.

Divisions.	*Systematic name.*	*Metric value.* Metres.	*English value.* Inch. / Feet. / Yards / Miles
5 Fun	= 1 Li	= ·01234 =	·486
10 Li, or 5 Tsun	= ½ Chih	= ·12345 =	·405
10 Half-Chih	= 1 Pú	= 1·23451 =	4·05
360 Pú	= 1 Lí	= 444·423 Kilometres	= 486·176
250 Lí	= 1 Tú (or Degree)	= 111·1059	= 69

The length of the Lí has varied at different periods from 386 to about 631½ Yards, and its average length may be taken as a little less than ⅓ of an English Mile.

Formerly the Lí was divided into 144 Chang of 2 Pú each: the Pú being subdivided into 6 Chih; and 192¼ Lí went to a Degree. On the reduction of the Pú to 5 Chih, the Lí was divided into 180 Chang or 1800 Chih.

In the survey of the Empire made in 1700, the Chih taken as the unit was equal to 12·1 English Inches, or ·308680 Metre; and the multiples of the Chih were the Pú of 5 Chih, equal to 5·064 English Feet, or 1·5034 Metrè; the Chang of 10 Chih equal to 10·128 Feet English, or 3·10683 Metrès; and the Lí of 180 Chang and equal to 607·68 English Yards. A Degree contained 200 of these Lí. The Degree is also subdivided as follows:—1 Degree = 60 Fun = 3600 Miaú.

At Canton, guard houses are supposed to be placed at intervals of 1 Tang-Sung (or League).

MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value.* Ares.	*English value* Sq. Yards.
25 Sq. Chih =	1 Pú or Kung =	·0277964 =	*3·32454
60 Kung =	1 Kish =	1·667785 =	199·4726
4 Kish =	1 Mau =	6·671141 =	797·8906
100 Mau =	1 King =	667·1141 =	79789·06

The chief land measure is the Mau, and to indicate quantities less than the Mau, decimals are used. A Fun of Land contains 24 Kung.

An English Acre is equal to about 6·1 Maus.

At Canton small pieces of land are generally measured by the *Tsing* of 100 Square *Chih*, equal to 16·639 English Square Yards; 60 Tsing or 600 Square Chih make a Mau, and at this rate a British Statute Acre is equal to 4·847 Mau.

At Macao the Mau = 1015·5266 English Square Yards, and 4·766 such Mau = 1 English Acre.

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* These values are reckoned at the rate of 13·126 inches for a Chih, or 1·196836 square foot for a square Chih.

At Shanghai a Mau = $\frac{1}{6}$ English Acre, and 6 such Maus = 1 English Acre.

The following are some of the English Acre values, estimated in Maus, at different places in China :—

A British Statute Acre	=	4·766 Maus 5·31 ,, 6·08 ,, 6·61 ,, 6·586 ,, 7 205 ,,

At Tientsin and Shanghai an annual tax of 1500 Cash per Mau is levied by the Chinese Government upon lands sold to foreigners.

MEASURES OF CAPACITY.

Divisions.		*Systematic name.*		*Metric value.* Litres		*English value* Imperial Gallons
		1 Koh*	=	·0513414	=	·0113
5 Koh	=	½ Shing	=	·25670701	=	·0565
10 Koh	=	1 Shing	=	·513414	=	·113
10 Shing	=	1 Tau	=	5·13414031	=	1·13

The Tau, Shing, Half-Shing, and Koh are the only Measures of Capacity now used in China. They are Measures for Dry Goods.

The size of the Tau differs considerably in different places; thus, there is the Granary Tau (Tsang Tau), a measure in very general use, which holds 6½ Catties, or about 1·13 British Imperial Gallon. The Market Tau (*Shi-Tau*, or *Shi-Kin-Tau*) is not much used, it is equal to about 1·63 British Imperial Gallon, or 7·40588381 Litres. The Swang Tau containing 13 Catties, and equal to about 2·26 British Imperial Gallons, or 10·26828 Litres. The Shing of Rice is usually considered equal to 1 Catty, but its actual weight varies from 12 to 22 Taels.

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* There are the following subdivisions of the Koh, which are however merely nominal, and are not in actual use:—The *Koh* of 2 Yoh, the *Yoh* of 5 *Choh*, the Choh of 10 *Chau* the Chau of 10 *Tsoh*, the *Tsoh* of 10 Kwei, the *Kwei* of 6 Suh. and the Suh is a grain of millet seed. There are also the following multiples of the Koh, which, like the subdivisions, are purely nominal, and are not in actual use:—The *Yu* of 16 *Tau*, the *Shih* of 10 *Tau*, the *Ping* of 80 *Tau*. and the *Fu* of 6 Tau 4 Shing. The term *Shih* is the weight of a varying number of Catties.

At Macao the Shing is a little less than 1 British Imperial Pint.

At Canton, of 2 Shings examined (in 1840), 1 contained 1·72 British Imperial Pint, or ·97685 Litre, and the other, ·919 British Imperial Pint, or ·521933 Litre.

At Shanghai 3 specimens of the Shing were found to contain respectively, 1·85; 1·87; and 1·33 British Imperial Pint, or 1·05068; 1·06204; and ·7553547 Litre.

For measuring Liquids, such as Spirits and Oil, measures containing definite weights are used; the most usual sizes are those containing 1, 2, 4, and 8 Taels. There are also large earthen vessels containing 60, 30, and 15 Catties, these are invariably of the same size and contain the same weights of liquids of equal specific gravity.

WEIGHTS.*

Divisions.	*Systematic name.*	*Metric value.* Grammes.	*English value.* oz. av.
	1 Léang or Tael	= 37·7993	= 1¼
			lbs. av.
16 Léang =	1 Kin or Catty	= 604·902	= 1⅓
		Kilogrammes	
100 Kin =	1 Tan or Pecul	= 60·47902	= 133¼

The Tael is nominally subdivided into 10 Lui, of 10 Shu each, the Shu being the weight of a *shelled* millet seed. There are also some nominal multiples of the *Kin*, namely, the *Yin* of 2 *Kin*, and equal to 2⅔ lbs. av., or 1·290574 Kilogrammes; the *Kiun* of 30 *Kin* equal to 40 lbs. av., or 18·14361 Kilogrammes; and the *Shi* of 120 *Kin*, equal to 160 lbs. av., or 72·57444 Kilogrammes. The Shi is often used to denote the same weight as the Tan or Pecul, viz., 100 Kin. It is also used in a vague sense to denote a "considerable weight." The subdivisions of the Tael used in weighing Gold, Silver, Pearls, Birds' Nests, Medicines, and such like, are as follows:—

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* There are 8 instruments used by the Chinese in weighing, viz., the Balance; the Dotchin or Steelyard (*toh-ching*); and the Money Scales (*le-tang.*) The Balance (*tien-ping*) is made of brass of different sizes, to weigh from 200 Taels down to *tenths* of a Grain. It is used for weighing Gold, Silver, Jewellery, Pearls, Medicines, Birds' Nests, and such like precious things. The largest Steelyards will weigh 8 or 9 Peculs. The Money Scales are put up in portable cases for convenience, in testing the weight of Copper or Silver received in payment.

GOLD AND SILVER WEIGHTS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Grammes	Troy Grains
	1 Le or Cash	= ·03779 =	·5798
10 Le or Cash	= 1 Fau or Candorun	= ·37799 =	5·7984
10 Fau	= 1 Tsien or Mace	= 3·77992 =	57·984
10 Tsien	= 1 Léang or Tael	= 37·7992 =	579·84

ENGLISH AVOIRDUPOIS WEIGHTS EXPRESSED IN CHINESE COMMERCIAL WEIGHTS.

English.		*Chinese*
1 Ounce	=	$\frac{3}{4}$ of a Tael, or 7$\frac{1}{2}$ Mace
4 Ounces	=	3 Taels
1 lb.	=	12 Taels, or $\frac{1}{3}$ of a Catty
1 Quarter	=	21 Catties
1 Cwt.	=	84 ,,
1 Ton	=	16 Peculs 80 Catties

In China Weights, and Measures of Length, Surface, and Dry Capacity, vary in different parts of the country. Generally they are greatest in the Southern provinces.

MEASURES OF TIME.

		1 Miau	=	1 Second
60 Miaus	=	1 Fun	=	1 Minute
15 Fun	=	1 Keh	=	15 Minutes
8 Keh	=	1 Shi-Shin	=	1 Hour
12 Shi-Shin	=	1 Jih or Chau-yé	=	12 Hours
10 Days	=	1 Sun	=	1 Decade
		1 Moon	=	29 or 30 Days
12 or 13 Moons	=	1 Nien	=	1 Year

HONG-KONG.

The British Weights and Measures, and also the Weights and Measures of China are used.

INDIA—(BENGAL).

The native linear Measures have no constant or uniform standard. They are founded upon indefinite ideas of the breadth of a finger or length of a fore-arm. The distance from the elbow to the tip of the middle finger is called a *Hat'h* or *Moolum*. The term Hat'h is generally translated Cubit. The average length of the Hat'h is 19⅓ English Inches, or ·495291 Mètre. In Benares, Bombay, Calcutta, Lahore, Madras, Mangalore, Seringapatam, and Tellicherry, its length is 18 English Inches, or ·4571915 Mètre. In Hydrabad its length is 35·334 English Inches, or ·9815 Metre. In other places its length is 20 English Inches, or ·50799 Metre.

The chief unit of linear measures is the Guz. Its length differs very much in different places, varying from 26 to 39½ English Inches. The Guz is sometimes an English Yard of 36 Inches. In the North-West Provinces the Illahi Guz, used in the Government Surveys, is 33 Inches, and 3 Guz make 1 Bans or Ganteh. 20 Ganteh make 1 Jarib.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English Value.*	*Metric Value.*
		Inches.	Metres.
	1 Jow or Jaub*	= ¼ =	·00634985
3 Jow	= 1 Ungulee	= ¾ =	·01904956
4 Ungulees	= 1 Moot	= 3 =	·076198
12 Ungulees	= 1 Big'hath or Span	= 9 =	·228595
2 Big'haths	= 1 Hât'h†	= 18 =	·457191
		Yards.	
2 Hât'hs	= 1 Guz	= 1 =	·914383
2 Guz	= 1 Danda or Fathom	= 2 =	1·828766
			Kilometres.
1000 Dandas	= 1 Coss	= 2000 =	1·828766
		Miles.	
4 Coss	= 1 Yojan or Jojun	= $4\frac{6}{11}$ =	7·315064

* A Jaub is 3 grains in length.

† The Hât'h is also divided into 16 Tussoos, each Tussoo being equal to 1½ inch.

MEASURES OF SURFACE.

The Beegah is the highest unit of Measures of Surface. Its subdivisions are as follows:—

Divisions.	*Systematic name.*	*English Value*	*Metric Value.*
		Square Feet.	Sq. Metres.
	1 Sq. Hât'h	= 2½ =	·2090425
4 Sq. Hât'hs	= 1 Cowrie	= 9 =	·836097
		Square Yards	
4 Cowries	= 1 Gunda	= 4 =	3·344388
20 Gundas	= 1 Cottah	= 80 =	66·88776
20 Cottahs	= 1 Beegah	= 1600 =	133·77552

The Cottah is also subdivided into 16 Chittâk 20 Gandeh. The Chittâk is equal to 5 English Square Yards, or 4·180485 Square Mètres. In Benares the Beegah is equal to 3136 Square Yards, or ·64793 Acre. A Beegah measures on each side 120 Feet. Its area is, therefore, 14,400 Square Feet, or 1600 Square Yards. $3\frac{1}{20}$ Beegah = 1 Acre, and 4 Beegah are equal to about 1 Madras Cawney.

For *Land Measure* in the North-West Provinces, the following measures are used in the Government Surveys:—

MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English Value*	*Metric Value.*
		Inches.	Sq. Metres.
	1 Guz	= 33	
		Feet.	
3 Guz	= 1 Bans or Rod	= 8¼	
		Sq. Feet	
9 Square Guz	= 1 Square Rod	= $68\frac{1}{16}$ =	6·7199592
		Sq. Yards.	Ares.
400 Square Rods	= 1 Beegah	= 3025 =	26·8479837

WEIGHTS AND MEASURES OF CAPACITY.

The Indian Weights and Measures of Capacity Act of 1871 extends to the whole of British India. The Weights and Measures under this Act were intended to be used in dealings and contracts by Government offices, Municipal bodies, and Railway Companies.

The unit and standard of weight established by this Act is the *Ser*. It is equal to a Kilogramme, or to 2·20462 lbs. Av.

The unit of Measures of Capacity is a measure containing one Ser of Water, and its maximum density, weighed in a vacuum.

The Ser is equal to a Litre, or ·2202443 British Imperial Gallon, or 1·76195 British Imperial Pint.

Under this Act the Governor General in Council is empowered to fix the magnitude and denominations of Weights and Measures of Capacity other than the units. They must be integral multiples or integral sub-multiples of the units. The Governor-General in Council is also empowered to regulate the amount of error to be tolerated in Weights, Weighing Machines, Measures of Capacity, and Balances, and the Materials of which they are to be made, and also to prepare tables of the equivalents of Weights and Measures of Capacity other than those authorised in the Act.

OLD WEIGHTS.

Divisions.	*Systematic name.*	*English Value.*	*Metric Value.*
		Grains Troy	Grammes
	1 Tola	= 180 =	11·66382
5 Tolas	= 1 Chittâk	= 900 =	58·3191
		lb. av.	
16 Chittâks	= 1 Seer	= $2\frac{2}{35}$ =	933·1056
			Kilogrammes
5 Seers	= 1 Passeeree or Punsarie	= $10\frac{2}{7}$ =	4·665528
8 Passeerees or 40 Seers	= 1 Imperial or Indian Maund	= $82\frac{2}{7}$ =	37·324224

The old "Factory Maund," adopted by the Bengal Government in A.D. 1787, was exactly $\frac{2}{3}$cwt. or 74$\frac{2}{3}$lbs. Av. The old "Bazaar Maund," (subdivided into 40 Seers,) weighed 72$\frac{1}{2}$lbs. Av.

In the interior the Seer varied very considerably. Thus, at Allahabad and Lucknow it was 96 Tolas; at Mirzapoor and Benares it was 84 Tolas; and at Hooghly it was 82 Tolas.

In the Calcutta market there were two Maunds in use, namely, the "Imperial," or Indian Maund = 82$\frac{2}{7}$ lbs. av. or 37·324224 Kilogrammes, and the Factory Maund = 74$\frac{4}{7}$ lbs. av. or $\frac{2}{3}$rds cwt. or 33·87 Kilogrammes. 100 Imperial Maunds were nearly equal to 110 Factory Maunds, and 1$\frac{1}{2}$ Factory Maunds are equal to 1 cwt. English.

OLD JEWELLERS' WEIGHTS.

Divisions.		*Systematic name.*		*English Value.*		*Metric Value.*
				Grains Troy.		Centigrammes.
4 Punks	=	1 Dhan	=	$1\frac{1}{2}$	=	3·037453
4 Dhan	=	1 Ruttee	=	$1\frac{7}{8}$	=	12·149812
8 Ruttee	=	1 Masha	=	15	=	97·1985
						Grammes.
12 Mashes	=	1 Tola	=	180	=	11·66382

The subdivisions of the Masha were used in stating the fineness as well as the weight of Gold and Silver. Pure Gold and Silver was said to be 12 Mashas fine.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English Value.*		*Metric Value.*
		Imperial Pints.		Litres.
	1 Chittâk	= ·122625	=	·069641
4 Chittâk	= 1 Powah	= ·49049	=	·278564
4 Powahs	= 1 Seer	= 1·96196	=	1·114259
		Imperial Gallons.		
5 Seer	= 1 Palli	= 1·226225	=	5·571295
40 Seer or 8 Palli	= 1 Maund	= 9·8098	=	44·570360

The Chittak was supposed to hold 5 Rupees weight of Oil.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English Value.*		*Metric Value.*
		Imperial Pints.		Litres.
	1 Chittâk	= ·122625	=	·069641
5 Chittâks	= 1 Koonki	= ·613125	=	·348205
16 Chittâks	= 1 Seer	= 1·96196	=	1·114259
4 Koonkis	= 1 Raik	= 2·4525	=	1·392820
4 Raiks or 5 Seer	= 1 Palli	Imperial Bushels. = ·153278	=	5·571295
20 Pallis	= 1 Sooli	= 3·06556	=	111·4259
16 Soolis	= 1 Khahoon	= 49·04896	=	1782·8144

The English and Metric Values given in the tables, are calculated at the rate of 68 Cubic inches, or 1·96196 British Imperial Pint, or 1·114259 Litres to the struck Seer; but

if the supposed or nominal value of the struck Seer, viz., 57 Cubic inches be assumed as the basis, then the struck Seer is equal to 1·644583 British Imperial Pint, or ·934011 Litres; and the Chittâk = ·102786 British Imperial Pint, or ·0583757 Litre; and the other subdivisions and multiples, in proportion. It must be remembered, however, that only heaped measure is recognised by immemorial custom among the Hindoos; and, therefore, the values given in the table of measures of dry capacity, are less than the actual quantities.

"The most common grain measure, and one which is to some extent known in almost every part of India, is the 'Seer Measure.' This is always understood to be a measure which, when heaped, will contain a 'Seer' *weight* of rice; or, in some places, instead of rice, a mixture of nine of the most common grains, known as the *Nan-danium* measurement." * The nine sorts of grains used in the Madras Presidency, are—Rice, Chenna, Cooltee, Pessoloo, Minamaloo, Dholl, Anamaloo, Gingeley-oil-seed, and Wheat.

As only *heaped* measure is recognised by native usage, it is evident that there is no rule as to the Cubic Content of the measures used, for vessels of very different Cubic Content may contain the same when heaped, in consequence of having different diameters. It is on this account that the values given to Indian measures in such Tables as those of Major Jervis, or Dr. Kelly (in his Cambist), being founded on the guaged Cubic Content, do not represent the true quantities.

Eight slightly heaped Pallis were supposed to contain a quantity of rice equal in weight to 1 old "Bazaar Maund" of 72½ lbs av. So that 1 Palli = $9\frac{1}{64}$ lbs. av. The Palli has a capacity of about 2800 Cubic Inches when struck. The "Seer" of grain, supposed to be 16 Chittâks, and to have a struck capacity of about 57 Cubic Inches is in practice, a measure which, when slightly heaped, contains 80 Rupees Weight (a Seer Weight) of Rice, and has a struck capacity of about 68 Cubic Inches.

NUMERATION TABLE.

4 Articles	=	1 Grenda.
5 Grendas	=	1 Coori, or Score.

* See "Suggestions for a Uniform System of Weights and Measures throughout India." By W. H. Bayley, Esq., of the Madras Civil Service

MEASURE OF TIME.

60	Poll	=	1	Ghurree	=	24 Minutes.
7½	Ghurree	=	1	Puhur	=	3 Hours.
8	Puhur	=	1	Day	=	24 Hours.
7	Days	=	1	Hugta	=	1 Week.
15	Days	=	1	Pukka		
2	Pukka	=	1	Maus	=	1 Month.
2	Maus	=	1	Zhitoo	=	1 Season.
6	Rhitoo	=	1	Batsar	=	1 Year.
12	Batsar	=	1	Joog		

INDIA—(MADRAS).

MEASURES OF LENGTH AND SURFACE.

The English Foot and Yard are now used by almost all native workmen.

The native *Kole* or Artificers' Rod, as also the *Guz*, introduced by the Mahomedans, is about 33 English Inches.

The *Moolum* (translated covid or cubit), used for measuring Cloth, varies in different districts from 18 to 21 Inches. Its average length is about 19½ or 19¾ Inches. It is subdivided into 24 *Ungulums*, or finger breadths.

The *Baum* (translated Fathom) is about 6¼ Feet.

For long distances the term *Nâlli Valli* is used. It is derived from *Nalli*, a space of time, and *Valli*, a road, and signifies the distance walked in 24 miuutes; that is, a little under 1¼ English Miles. 7 Nâlli Valli = 1 Kâdam, or about 10 Miles.

MEASURES OF SURFACE.

For Land Measure, the native method is to estimate the space which a certain quantity of seed will sow, and this makes the native terms quite uncertain. Sometimes an area is denoted by so many "Rods" or "Ropes" Square; but these Rods and Ropes differ in every district.

In Madras itself and in some other districts the *Cawnie* is equal to 57600 Square Feet, or 1·3223 Acres, and is subdivided into 24 "Grounds," or else into 100 "Coolies," as follows:—

Madras Value.	*Systematic name.*	*English Value.*	*Metric Value.*
		Square Yards	Ares.
	1 Coolie =	64 =	·53510208
4½ Coolies	= 1 "Ground" =	266⅔ =	2·229592
24 "Grounds" or 100 Coolies	= 1 Cawnie =	6400 or Acre 1·3223 =	53·510208

The Cawnie is also subdivided into *Annas* or sixteenths, each equal to 400 English Square Yards, or 234·4388 Square Mètres.

During the last few years, in consequence of the Revenue Field Survey, the English Acre has come to be generally known. In this Survey the Gunter's Chain is used, and in the accounts, the Acre is subdivided into *thousandths*, as in the English Ordnance Survey.

MEASURES OF CAPACITY.

Divisions.	*Systematic name.*	*English Value.*	*Metric Value.*
		Imperial Pints	Litres
	1 Olluck =	·36065 =	·204826
8 Ollucks =	1 Puddee or Measure =	2·88522 =	1·638612
		Imperial Gallons	
8 Puddees =	1 Mercâl =	2·88522 =	13·108900
5 Mercâls =	1 Parah or Chunan =	14·42610 =	65·544504
80 Parahs =	1 Garce =	1154·0880 or Quarters 18·0300 =	5243·56032

In 1846 the Madras Government fixed the Puddee, or Regulation Measure, to be used in all Government transactions at 100 Cubic Inches, or 1·44261 Imperial Quarts, the Olluck being ⅛th of the Puddee, and the Mercâl being 8 Puddees. The Regulation Puddee was a cylinder, 8 inches by 4 inches.

When slightly heaped the Puddee = 104½ English Cubic Inches, or 1·50392734 British Imperial Quart, or 1·708257 Litres.

The Garce for Grain was equal to 320 lbs. av. of Rice, or 3⅝ Imperial Maunds. The Parah of 5 Mercâl was a measure 10 inches deep by 20 inches wide, and 20 broad.

In the Shipping trade Grain was sold in Bags of 2 Bengal Maunds = 164½ lbs. av.

The "Seer-measure," for Grain, supposed to contain, when heaped, a "*Pucka-seer*" or 80 Rupees' Weight, or 2 lbs. av. of Rice. In 1852 the grain measures were found to be of different shapes and materials, some were shaped like hour-glasses, some were joints of bamboo, and some were earthenware pots, "but, as a general rule, they were intended to contain, when heaped, a Seer Weight, or definite number of Seers either of Rice or of mixed grain, but usually of Rice, and the Seer Weight was generally that of 80 Tolas." The best "Seer-measures were about 3¼ to 3⅜ inches in diameter, and 6 inches deep, but they were never true cylinders. Their Cubic Contents were from 66¼ to 67 Cubic Inches, holding about 75 Tolas of Rice when *struck*, and 80 when moderately heaped."* "A vessel of 66$\frac{1}{10}$ Cubic Inches Capacity, contains at a temperature of 84°, 16650 Grains, or exactly 92½ Tolas' Weight of Water. This would hold on an average when *struck*, 74½ Tolas' Weight of Rice, and with a diameter of 4 inches, 80 Tolas', when *heaped*. Thus, if the Seer weight be assumed as 80 Tolas', such a measure would be exactly what was understood by the natives of the country to be a "Seer-measure."

"The sub-multiples of the Seer-measure were generally used for *liquid* measures in India. The only liquids sold by measure, were Ghee (clarified butter), Oil, and Milk. No defined measure was used for Arrack, and Spirits in Madras were sold by the "Dram" of 5·775 Cubic Inches, or $\frac{1}{10}$ of the old Wine Gallon."

The Para was used for measuring Lime. It had a capacity of from 3800 to 4000 English Cubic Inches, and was equal to from 13·704855 to 14·426103 British Imperial Gallons, or from 62·267434 to 65·544667 Litres.

Salt was measured in Madras in Mercâls, 424 of which were a "Garce." The Garce was supposed to weigh 120 Indian Maunds, or 4·41 Tons English.

Act VII., of 1833, only legalised the Tola as the *Unit* of Weights, and the weights of Bengal were never adopted in the Madras Presidency, even in Government transactions. The following weights were the legal weights of the Madras Presidency from 1846.

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* *Suggestions for a Uniform System of Weights and Measures throughout India.* By W. H. Bayley, Esq., of the Madras Civil Service.

OLD MADRAS WEIGHTS.

Divisions.	*Systematic name.*	*English value.* Troy Grains	*Metric value.* Grammes
	1 Tola	= 180	= 11·66381
3 Tolas	= 1 Pollum	= 540	= 34·99143
8 Pollums	= 1 (Cutcha) Seer	= 4320	= 279·93144
5 (Cutcha) Seers	= 1 Viss	= 3·08571 lbs. av.	= 1·3996572 Kilogrammes
8 Viss or 40 Seers	= 1 Maund	= 24·68571	= 11·1972576
20 Maunds	= 1 Candy	= 493·71428	= 223·945152

By *Commercial usage* the Viss is always considered 3¼ lbs.; the Maund 25 lbs.; and the Candy 500 lbs. av.

OLD JEWELLERS' WEIGHTS.

The Weights used by Jewellers are the *Munjadi* equal to 5 Troy Grains, or ·323995 Grammes, and the *Pagoda* equal to 54 Troy Grains, or $\frac{1}{10}$th of a Pollum, or 3·499143 Grammes.

NUMERATION TABLE.

3 Articles	=	1 Pateh.
10 Pateh	=	1 Corge.

INDIA—(BOMBAY).

OLD MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.* Inches.	*Metric value.* Metre.
2 Ungulee	= 1 Tussoo	= 1⅛	= ·028574
8 Tussoos	= 1 Vent'h (or ¼ Hat'h)	= 9	= ·228595
16 Tussoos	= 1 Hât'h (covid or cubit)	= 18	= ·457191
24 Tussoos	= 1 Guz	= 27	= ·685785

In Bombay the Guz, the Tussoo, and the Ungulee, were the measures used in the purchase and sale of Cloth. A Builder's Tussoo was equal to 2·3625 English Inches, or ·0600064 Mètre.

In Surat the Builders' Tussoo was equal to 1 inch English, or ·025399 Mètre, and the Builder's Guz to 2 feet, or ·609588 Mètre. But the Cloth Measure Tussoo of Surat, was equal to 1·161 English Inch, or ·0294889 Mètre, and the Guz to 27·864 Inches,* or ·7077328 Mètre.

MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*English value*	*Metric value.*
		Square Yards.	Square Metres.
$34\frac{1}{36}$ Sq. Hat'h =	1 Kutty =	9·8175 =	8·208363
20 Kutties =	(1 Pund (or Vaso)) =	196·35 =	164·167646
		Area.	
20 Pund =	1 Beegah =	3927 =	32·833529
		Acres	
120 Beegah =	1 Chahur =	97·3632 =	3940·0235028

The *Surface Measures* vary both in names and values, in almost every District of the Presidency; but those just given are most frequently used. The average value of the Beegah is about $\frac{3}{5}$ of an English Acre. An English Acre is $1\frac{3}{5}$ Delhi Beegah, or 1 Orissa Beegah. The Tirhoot Beegah, which is subdivided into 400 Square *Lagi*, is equal to 4225 Square Yards, or ·8729 Acre English. In the Revenue Field Survey, the English Acre is used; it is subdivided into 40 Goontahs, and each Goontah into *Annas* or *sixteenths*.

In the North-West Provinces, the following are the Surface Measures:—

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Sq. Inches.	Sq. Metres.
20 Nanwansi =	1 Saswansi =	$24\frac{1}{2}$ =	·015807
20 Saswansi =	1 Kachwansi =	490 =	·3161492
		Sq. Yards.	
20 Kachwansi =	1 Biswansi =	$7\frac{9}{36}$ =	6·322983
20 Biswansi =	1 Biswa =	$151\frac{1}{4}$ =	126·459671
20 Biswa =	1 Beegah =	3025 =	2529·193425

* The *Wassa* was a Timber Measure equal to 1·358 of an English Inch. The Guz for Timber Measurement was equal to 27·17 English Inches. The *Hat'h* or Cubit, for measuring Matting, of 18 Tussoos, was equal to 20·9 English Inches.

In Gugerat the following denominations are applied to the subdivisions of the Beegah :—

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Square Inches.	Square Metres.
20 Khund	= 1 Padtal	= 24¼	= ·015807
20 Padtal	= 1 Padat	= 490	= ·3161492
		Square Yards.	
20 Padat	= 1 Vishwasi	= $7\frac{9}{16}$	= 6·322983
20 Vishwasi	= 1 Vaso	= 151¼	= 126·459671
20 Vaso	=1 Beegah	= 3025	=2529·193425

OLD WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains	Grammes
4 Dhan or Yav	= 1 Ruktica	= 2·1267	= ·13781
8 Ruktica	= 1 Masha	= $17\frac{1}{7\frac{1}{2}}$	= 1·102482
4 Masha	= 1 Tank	= $68\frac{1}{15}$	= 4·409927
		lbs. av.	
72 Tanks, or 30 Pice	= 1 Seer	= 7	= 317·51475
			Kilogrammes
40 Seers	= 1 Maund	= 28	= 12·70059
20 Maunds	= 1 Candy	=560	= 254·0118

The Candy varied from 560 lbs. to 3055 lbs. The Sattara Candy was 3055 lbs. The Candy for Cotton was 28 Maunds, or 7 cwt.

At Poona the Seer was equal to 80 old Rupees' Weight, or to 76·658 Tolas. and its multiples were as follows :—

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		lbs. av.	Grammes.
80 Old Rupees' Weight	= 1 Seer	= 1·9714	= 894·21225
			Kilogrammes
5 Seers	= 1 Pusseri	= 9·857	= 4·47106
8 Pusseri	= 1 Maund	= 78·856	= 35·76849
3 Maunds	= 1 Palla	=236·57	= 107·30547

OLD KURRACHI WEIGHTS.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Imperial Tolas	oz. av.	Grammes
4 Kasira	=	1 Dokra	=	1·08	– $\frac{4}{5}$ =	12·59979
4½ Dokras	=	1 Anna	=	4·86	= 2 =	56·6991
					lbs. av.	
6 Annas	=	1 (Pucka) Seer	=	77·76	= 2 =	907·185
				Seers		Kilogrammes
40 (Pucka) Seers	=	1 Maund	=	38·88	= 80 =	36·2874
3 Maunds	=	1 Potea	=	116·64 or Maunds 2·915	= 240 =	108·8622

OLD JEWELLERS' WEIGHT.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Troy Grains		Grammes
20 Vasses	=	1 Ruttee	=	$1\frac{7}{9}$	=	·12149
3 Ruttees	=	1 Waal	=	$5\frac{5}{6}$	=	·36449
8 Waals	=	1 Tank	=	45	=	2·91595
4 Tanks	=	1 Tola	=	180	=	11·66382

In Gujerat the Weights used by Jewellers are as follows:—

Divisions.		*Systematic Name.*		*Metric value.*		*English value.*
				Troy Grains.		Grammes
6 Chawals or Chows	=	1 Ruttee or Goonj	=	$1\frac{1}{12}$	=	·124198
3 Goonj	=	1 Val or Waal	=	$5\frac{3}{4}$	=	·372594
16 Waals	=	1 Guddeanna	=	92	=	5·961508
2 Guddeannas	=	1 Tola	=	184	=	11·923016

OLD MEASURES OF CAPACITY FOR DRY GOODS AND LIQUIDS.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Imperial Pints		Litres
		1 Tippree	=	·28001	=	·15902
2 Tipprees	=	1 Seer	=	·56002	=	·31805
4 Seers	=	1 Pylee	=	2·24009	=	1·27222
				Imperial Gallons		
16 Pylees	=	1 Parah	=	4·48018	=	20·35555
8 Parahs	=	1 Candy	=	35·84151	=	162·84441
25 Parahs	=	1 Mooda	=	112·00473 or Imp. Quarters 1·75007	=	508·88878

Paddy (Rice in the husk) was sold by the Mooda of 4 Candies, each of 6¼ Parahs, each of 20 Adholees, each of 7½ Seers, each of 2 Tipprees, as shown in the following table :—

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Imperial Pints		Litres
2 Tipprees	=	1 Seer	=	·56002	=	·31805
7½ Seers	=	1 Adholee	=	4·20017	=	2·38541
				Imperial Gallons		
20 Adholees	=	1 Parah	=	10·50044	=	47·70832
6¼ Parahs	=	1 Candy	=	65·62777	=	298·17702
4 Candies	=	1 Mooda	=	262·51109	=	1192·70808

The Candy of this table is equal to 24·236175 British Imperial Bushels, or 8·80925 Hectolitres, and weighs 215$\frac{5}{10}$ lbs. av., or 97·947 Kilogrammes.

CEYLON.

MEASURES OF LENGTH AND SURFACE.

The British Measures of Length and Surface are used, (see Great Britain).

At Candy, the Land Measure is the *Amomam* of 4 Peylas, each of 10 Coornies. It is equal to about 2 Acres 2 Roods 37½ Perches English.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*		*English value.*		*Metric value*
				Imperial Pint.		Litres
		1 Seer	=	1·86524	=	1·05993
				Imperial Gallons		
4⅘ Seers	=	1 Cooreie	=	1·11914	=	5·08479
2½ Cooreies	=	1 Mercal	=	2·79786	=	12·71199
2 Mercals	=	1 Parah	=	5·59573	=	25·42398
8 Parahs	=	1 Amomam	=	44·76588 or Quarters ·69946	=	Hectolitres 2·03392
25 Amomams	=	1 Garce	=	17·48667	=	50·80498

The Para weighs, of Coffee, from 30 to 35 lbs. av.; of Pepper, from 27 to 30 lbs. av.; of Salt, from 52 to 55 lbs. av.; and of Rice, from 42 to 46 lbs. av.

MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gallons	Litres
	1 Quart =	·208277 =	·946
4 Quarts =	1 Gallon =	·833111 =	3·785
2 Gallons =	1 Welt =	1·666222 =	7·57
75 Welts =	1 Legger =	124·96665 =	567·78

The Gallon and Quart of this Table are the old English Wine Gallon and Quart.

In the wholesale purchase of Spirits, (Arrack, &c.,) 80 Welts are reckoned to the Legger; but in retail sales, 75 Welts are called a Legger.

WEIGHTS.

The Weights of the United Kingdom of Great Britain and Ireland are used for Foreign Goods.

The native Candy, or Bahar = 500 lbs. av., or 226·79625 Kilogrammes.

The Garce is 9256½ lbs. av., or 4·13236 Tons English.

A Bale of Cinnamon contains about 92½ lbs. av. English.

GOA—(Portuguese India.)

The old Weights and Measures of Portugal, (See Brazil,) are those chiefly used, but the Weights and Measures of British India are also used.

MEASURES OF LENGTH.

The old Portuguese Vara and Covado (See Brazil).

MEASURES OF CAPACITY FOR DRY GOODS AND RICE.

The old Measures of Portugal are those chiefly used. The Candy (of Goa) of 20 Maunds, each of 24 Medidas = 13·572258 British Imperial Bushels,* or about 493⅛ Litres.

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* The old English Winchester Bushels.

Pearls are sold by the *Chego*, the value of which in Carats is estimated as follows:—

Carats.	Chegos.	Troy Grs.	Grammes.	Carats	Chegos.	Troy Grs.	Grammes
1	5	3½	·20735	7	34	22⅘	1·45149
2	8	6⅘	·41471	8	44	25⅘	1·65885
3	11½	9⅗	·62207	9	56	28⅘	1·86621
4	16	12⅘	·82942	10	69	32	2·07357
5	21	16	1·03678	11	84	35½	2·28092
6	27	19¼	1·24414	12	100	38⅘	2·48828

STRAITS SETTLEMENTS—(Malacca, Singapore, and Penang.)

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
	1 Hasta or Cubit	18	·45719
		Feet	
4 Hastas	1 Depa	6	1·82876
2 Depas	1 Jumba	12	3·65753
		Yards.	
20 Jumbas	1 Orlong	80	73·15068

The English Yard is also occasionally used as a measure of length.

The Hasta is divided into Halves and Quarters. It is used in Cloth Measures. An English Yard is equal to 2 Hastas.

MEASURES OF SURFACE.

The Square Orlong = 6400 Square Yards, or 1·32231 English Acre, or 5351·0231548 Square Metres.

MEASURES OF CAPACITY.

Divisions.	*Systematic name.*	*English value*	*Metric value*
		Imperial Gallons.	Litres
4 Chapahs	1 Gantang	1¼	5·67935
10 Gantangs	1 Parah or Parra	12½	56·79358
800 Gantangs	1 Coyan	1000	4543·48712

The Gantang is variable in size. Thus, at Penang, it is equal to ·9796 Imperial Gallon English, and its multiples in proportion. The Gantang is the principal Measure of Capacity for Rice, Salt, Oil, and other articles. The Parah is only a nominal measure used in reckoning. It nominally contains 10 Gantangs, but sometimes it contains 5, sometimes 15, and sometimes 20 Gantangs. A Coyan is supposed to weigh about 47 cwt. English.

WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
		Oz. Av.	Grammes.
	1 Tael =	$1\frac{1}{8}$ =	37·79941
		lbs. Av.	
16 Taels =	1 Catty =	$1\frac{1}{3}$ =	604·79066
			Kilogrammes
100 Catties =	1 Pecul =	$133\frac{1}{3}$ =	60·47906
3 Peculs =	1 Bahr =	400 =	181·49720
40 Peculs =	1 Coyan =	$3333\frac{1}{3}$ =	2419·16266

The denominations of Weights are the same as those of China. The Pecul and Catty are not always of the same uniform weight; for instance, the Pecul at Penang is equal to $142\frac{2}{3}$ lbs. av., and is only used in weighing Pepper and Tin, but this is owing to variations in the weight of the Bahr. At Penang, it is equal to 421 Catties. Goods are bought from native vessels by the Penang Pecul of $142\frac{2}{3}$ lbs. av. or 64·71253 Kilogrammes, and sold by the Chinese Pecul of $133\frac{1}{3}$ lbs. av.

At Malacca the Pecul weighs 135 lbs av., or 61·23498 Kilogrammes, and a *Bahr* weighs 428 lbs. av.

Grain and Salt are sold by the *Coyan* of 40 Chinese Peculs.

The Penang *Coyan* is a Measure of Capacity which contains 43 Peculs of Salt, or 45 of Rice.

A Sack of Salt weighs 100 lbs. av., or 45·35925 Kilogrammes, and a Sack of Rice or Dholl 164 lbs. av., or 74·38917 Kilogrammes.

GOLD DUST WEIGHT.

Divisions.	*Systematic Name.*	*English value.*	*Metric value.*
		Troy Grains.	Grammes.
	1 Saga =	$4\frac{1}{3}$ =	·28079
12 Sagas =	1 Miam =	52 =	3·36955
16 Miams =	1 Bongkal =	832·84 =	53·91294
		lbs. Troy.	Kilogrammes.
29 Bongkals =	1 Catty =	2·9818 or lbs. av. 2·3795 =	1·07826

A Gold Catty is $1\frac{1}{7}\frac{7}{8}$ of the Common Catty.

BURMAH.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches	Metres
$1\frac{5}{4}$ Thits	= 1 Pulgat	= 1 =	·025399
8 Thits or $5\frac{1}{2}$ Pulgats	= 1 Taim or Maik*	= $5\frac{1}{2}$ =	·139694
4 Taim	= 1 Saading or Toung	= 22 =	·558778
4 Toung	= 1 Lan	= 88 =	2·235136
7 Toung	= 1 Tha	= 154 =	3·911448
		Yards	
20 Thas	= 1 Oke-tha-pah	= $85\frac{5}{9}$ =	78·22897
250 Thas	= 1 Tain	= $1069\frac{4}{9}$ =	977·86220
		Miles.	Kilometres.
4 Tains or 1000 Thas	= 1 Dain	= 2·4305 =	3·9114488
$6\frac{2}{5}$ Dain or 320 Oke-tha-pahs	= 1 Uzena	= 15·5555 =	25·0332723

The English Yard, Foot, and Inch are being adopted.

MEASURES OF CAPACITY.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gills.	Litres
	1 Lamyet	= 1 =	·14198
2 Lamyets	= 1 Lamay	= 2 =	·28468
		Imperial Pint.	
2 Lamays	= 1 Salay	= 1 =	·56936
		Imperial Quarts.	
4 Salays	= 1 Pyee	= 2 =	2·27744
		Imperial Gallon.	
4 Pyees	= 1 Sah	= 1 =	4·543487
		Imperial Peck.	
2 Sahs	= 1 Saik	= 1 =	9·086974
		Imperial Bushel.	
2 Saiks	= 1 Kwai	= $\frac{1}{4}$ =	18·173948
2 Kwais	= 1 Ten or Teng	= 1 =	36·347896
		Imperial Quarters.	
100 Tens	= 1 Coyan	= $12\frac{1}{4}$ =	3634·7896

* The breadth of the hand with the thumb extended.

The Measures of British India are gradually being introduced into Burmah.

A Teng is a *basket full*, a Teng of Rice is supposed to be equal to about 58½ lbs. av., or 16 Viss, or 40 Penang Catties.

WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains	Grammes
2 Small Ruays =	1 Large Ruay =	3·9375 =	·25514
4 Large Ruays =	1 Bai or Ruay or 1 Anna =	15·75 =	1·02058
2 Bais =	1 Moo =	31·5 =	2·04117
2 Moos =	1 Mat =	63 =	4·08233
4 Mats =	1 Kyat or Tical =	252 =	16·32933
		lbs. av.	Kilogrammes
100 Kyats =	1 Piakthah or Viss =	3⅓ =	1·632933

The Small Ruay is the Scarlet Bean (*Abrus Precatorius*, and the large one is the black oblong bean *Adenanthera Pavontna.*) But the *Bai*, *Moo*, *Mat*, *Kyat*, and *Piak*, are real weights usually of polished brass.

SIAM.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
	1 Nin* =	⅛ =	·020637
12 Nin =	1 Kup or Keub† =	10 =	·25399
2 Kup =	1 Sok‡ =	20 =	·50799
2 Sok =	1 Ken =	40 =	1·01598
4 Sok =	1 Wa or Vöuá =	80 =	2·03196
		Yards	
20 Wa =	1 Sen =	44·4 =	40·63926
		Miles.	Kilometres
100 Sen =	1 Röeneng =	2·525252 =	4·06392
4 Röeneng =	1 Yote =	10·10101 =	16·25571

The Siamese value of the Nin is stated to be "Piet Met Can Pleüae," that is, 8 grains of husked rice." The "Nin" is divided into Eights and smaller parts.

† Measured from the end of the thumb to the middle finger.

‡ Measured from the end of the middle finger to the elbow.

The Ken is only used in Cloth Measure.

The Siamese unit of length is the standard "wa;" it is intended to be of the length of 80 English standard inches at the temperature of 85° F., which is the standard temperature for Weights and Measures in Siam.

This length of 80 English inches is marked by lines upon a solid bar of standard silver; and, at a verification made in 1876 by the Standards Department of the English Board of Trade, it was found to be 79·999 English inches at the temperature of 85° F.

MEASURES OF CAPACITY.

Divisions.	*Systematic name.*	*English value.*	*Metric value*
	1 Thanan	= Pint 1·6685 =	Litres. ·8519
20 Thanans	= 1 Thang	= Gallons. 3·75 =	17·038076
25 Thanans or 1¼ Thang	= 1 Thangsat	= 4·1743 =	21·297595
80 Thangsats or 100 Thang	= 1 Coyan	= 375 =	Hectolitres 1·7038076

For dry goods the unit is the "*Thangsat*," or bucket; its legal capacity is 10 × 10 × 20 Siamese nin, and it is equal to 1157·4074 English cubic inches.

Some Thangsats are made of German silver and some of brass. A standard Thangsat of German silver was verified by the British Board of Trade in 1876, at the request of the Government of Siam, and, at a temperature of 62° F. and barometer 30 in., it was found to contain 292481 grains weight of distilled water, or by computation of the capacity of 1158·5339 cubic inches; and, at the temperature of 85° F., of the capacity of 1159·8477 cubic inches.

A brass "*Thangsat*," verified at the same time, was found to be of the capacity of 1156·196 English cubic inches at 62° F., and 1156·959 English cubic inches at 85° F.

For liquids the unit is the "*Thanan*," or cocoanut shell; its legal capacity is 5 × 5 × 4 Siamese nin, and it is equal to 57·87037 English cubic inches.

Some "*Thanans*" are made of German silver, electro plated with silver, and some of brass. A German silver *Thanan*,

electro plated with silver, was tested by the British Board of Trade in 1876, at the request of the Government of Siam, and, at a temperature of 62° F., barometer 30 in., it was found to contain 14602·2 grains weight of distilled water, or by computation of the capacity of 57·83935 English cubic inches; at 85° F. = 57.8800 cubic inches.

A brass "*Thanan*," verified at the same time, was found equal to 58·053 English cubic inches at 62° F.; at 85° F. = 58·091 cubic inches.

WEIGHTS.

Divisions.	*Systematic name.*	*English value*	*Metric value.*
		Troy Grains	Grammes.
	1 Bat or Tical*	= 234·0625	= 15·167
4 Ticals	= 1 Tael	= 936·25	= 60·668
		lbs. av.	Kilogrammes
20 Taels	= 1 Chang or Siamese Catty	= 2·675	= 1·21336
50 Chang	= 1 Hap or Picul	= 133.75	= 60·66805

The Siamese unit and standard of Weight is the "Chang," called by foreigners the "Siamese Catty," and its legal Weight is equal to 2·675 lbs. av.

A Standard "Chang," constructed of platinum—iridium was verified by the English Board of Trade in 1876, and was found to be equal in a vacuum to 2·674761 British Imperial Standard pounds; and in air at 62° F. and barometer at 30 in., it was found equal to 2·675007 in terms of the brass commercial pound, or 18725·049 grains.

The smaller Siamese standard weight is the "bat," called by foreigners the "tical," it is the $\frac{1}{80}$th part of the chang, and its legal weight is equal to 234·0625 English grains. The "bat" is also made of platinum—iridium; and, on verification, in 1876, by the English Board of Trade, it was found equal in a vacuum to 234·044 grains of the British Imperial standard pound; and in air at 62° F. to 234·06515 grains.

The "Hap" is the large commercial standard weight of Siam, it is 50 Chang, and its legal weight is equal to 133·75

* The Tical for weighing Gold and Silver is equal to 236 Troy Grains or 15·29257 Grammes.

lbs. avoirdupois. A standard "Hap," made of gilt gun metal, was tested by the English Board of Trade in 1876 and was found to be equal, in air at 62 F., to 133.731 lbs. avoir.

The *Coyan* is a weight which is usually reckoned equal to 20 Piculs, but it varies from 18 to 22 Piculs. The Coyan of Paddy (rice in the husk) is reckoned at about 16⅔ Piculs, and is considered equal to 2133⅓ lbs. av.

MEASURES OF TIME.

Divisions.		*Systematic name.*	*English value.*
60 Winatees	= 1 Natee	= 1 Minute
6 Natees	= 1 Bat	= 6 Minutes
10 Bats	= 1 Mong or Toom	= 1 Hour
12 Mong	= 1 Wan (period of day)	= 12 Hours
12 Toom	= 1 Koon (period of night)	= 12 Hours
29 or 30 Wans	= 1 Duan	= 1 Lunar Month
12 or 13 Duans	= 1 Pee	= 1 Year
10 Pees	= 1 Sok or Cycle	= 10 Years

The night is also divided into Tams or Watches of three hours each.

Each month is divided into two parts, the first called *Kang Koon* (increasing moon), and the second called *Kang Raam* (waning moon). The days of the second half are also numbered from 1 to 14 or 15. The even months consist of 30 days, and the odd ones of 29 days; and, in every 19 years, 3 intercalary days are added. All the Siamese months, except the first two, are denoted by numbers. The 1st and 2nd months are called respectively, *Ai* and *Yee*, the others are called *Duan-Sam*, *Duan-See*, *Duan-Ha*, *Duan-Hook*, *Duan-Ket*, *Duan-Peet*, *Duan-Kan*, *Duan-Sib*, *Duan-Sib-it*, *Duan-Sib-Song*, *i.e.*, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, and 12th month. In reference to the seasons, the 1st and 2nd months are called winter; the 3rd, 4th, and 5th, slight summer, and the other seven months, complete summer.

The Siamese have two eras, the *Sacred* and the *Civil*, the former reckoned from the death of Budha B.C. 545, is called *Puta Sakkarat*, and the latter called *Chula Sakkarat* was established A.D. 638 by the Siamese King *Phra Ruang*, soon after the Hejira.

The Year 1867 corresponds to the 2450th year of the Sacred era, or to the 1229th year of the Civil era of Siam. In expressing dates, the Siamese give the day of the week, the day

of the increasing or waning moon, the month, the year of the era, and cyclic name of the year. The dates are usually written at the four points of a cross; thus, $\frac{3+5}{2}$, Tuesday, 2nd day of waning moon of the 5th month.

ANAM—or, (COCHIN CHINA.)

MEASURES OF LENGTH.

Divisions.		*Systematic name.*	*English value*		*Metric value.*
			Inches.		Metres.
	1	Ly	= ·0192	=	·00048
10 Ly	= 1	Phau	= ·192	=	·00487
10 Phau	= 1	Tac	= 1·92	=	·04876
10 Tac	= 1	Thuoc or Cubit	= 19·2	=	·48766
			Feet.		
5 Thuoc	= 1	Ngu	= 8	=	2·43835
10 Thuoc	= 1	Truon	= 16	=	4·87670
			Yards		
3 Ngu	= 1	Sao	= 8	=	7·31506
3 Truons	= 1	Chai Vai or That	= 16	=	14·63012
10 Saö	= 1	Mao	= 80	=	73·15064
10 Chai Vai	=	Quo	= 160	=	146·30128

The Thuoc, which is the chief unit of measures of length, varies considerably in different places; thus there are six different values assigned to it, varying from 15 to $25\frac{3}{5}$ English Inches, or from ·38098 to ·656209 Mètre, but the Thuoc, the value of which is given in the Table, is the one in general use. The Drapers' Thuoc is a little longer, being equal to $25\frac{4}{5}$ Inches; the Tac to $2\frac{1}{2}$ inches; the Phan to ·256; and the Ly to ·0256 inch English.

ITINERARY MEASURES.

Divisions.		*Systematic name.*	*English value.*		*Metric value.*
			Yards		Metres.
	1	Li or Mile	= 486	=	444·390138
2 Li	= 1	Dam	= 972	=	888·780276
			Miles.		Kilometres
5 Dam	= 1	League	= 2·761	=	4·4439

SURFACE OR SQUARE MEASURES.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Sq. Yards	Sq. Metres
9 Sqr. Ngu	= 1 Sqr. Saö	= 64	= 53·510208
			Ares
100 Sqr. Saö	= 1 Sqr. Maö	= 6400	= 53·510208

WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains	Grammes
10 Ai =	1 Tran =	·000006 =	·0000003
10 Tran =	1 Huy =	·000060 =	·0000038
10 Huy =	1 Chau =	·000601 =	·0000389
10 Chau =	1 Hot =	·006015 =	·0003898
10 Hot =	1 Hao =	·060156 =	·0038981
10 Hao =	1 Li =	·601563 =	·0389806
10 Li =	1 Phan =	6·015625 =	·3898061
10 Phan =	1 Dong =	60 15625 =	3·8980605
10 Dong =	1 Luong =	601·5625 =	38 9806056
10 Luong =	1 Nen =	6015·625 =	389·806056
		lbs. av.	
16 Luong =	1 Can =	$1\frac{3}{8}$ =	623·68969
			Kilogrammes
10 Can =	1 Yen =	$13\frac{3}{4}$ =	6·23689
5 Yen =	1 Binah =	$68\frac{3}{4}$ =	31·18484
10 Yen =	1 Ta =	$137\frac{1}{2}$ =	62·36896
5 Ta =	1 Quan =	$687\frac{1}{2}$ =	311·84484

MEASURES OF CAPACITY FOR GRAIN.

Divisions.	*Systematic Name.*	*English value.*	*Metric value.*
		Imperial Gallons.	Litres.
	1 Hao	= $6\frac{2}{5}$ =	28·270586
2 Hao =	1 Shita or Tao =	$12\frac{4}{5}$ =	56·541172

PERSIA.

The Weights and Measures of Persia are not uniform, being different in different places, and according to the purposes for which they are employed :—

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.* Inches.	*Metric value.* Metres.
	1 Gereh	= 2⅔	= ·06032
4 Gerehs	= 1 Quarter-Zer	= 9½	= ·24129
8 Gerehs	= 1 Half-Zer	= 19	= ·482581
16 Gerehs	= 1 Zer	= 38	= ·965162

The Kadam, or Step, is equal to about 2 feet English, or ·609588 Mètre, and 12000 Kadam make 1 Fersakh (Parasang) equal to about 4½ Miles, or 7·2491917 Kilometres ; but varying from 3¾ to 4¼ Miles, or from 5·638426022 to 7·2491917 Kilometres.

There is also the Schah Goss, each of 2 Feet, each of 24 fingers, each of 7 Barleycorns. It is used in measuring Woollen Goods, and is equal to 40 English Inches, or 1·0160 Mètre ; the Monkelser, or Bashoor Goss, used in retail transactions and equal to 36½ English Inches, or ·9347 Mètre ; and the Tabreez Goss equal to about 44 English Inches, or 1·17579 Mètre.

The Fersakh (Parasang) is supposed to be $\frac{1}{20}$th of a degree of the Equator, and is equal to about 7 Russian Versts.

Distances are commonly reckoned by the Fursoch or Augage, (being the distance a horse can walk in one hour,) about 4½ English Miles. Great distances are reckoned by a caravan's journey in a day, about 30 English Miles.

SURFACE AND CUBIC MEASURES.

The Surface and Cubic Measures are the Squares and Cubes of the Measures of Length.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*	*English value.*		*Metric value.*
			Imperial Gallons.		Litres
4 Sextarios	=	1 Chenica	= ·28944	=	1·315066
2 Chenicas	=	1 Capicha	= ·57888	=	2·630132
3½ Capichas	=	1 Collothun	= 1·809	=	8·219168
			Imperial Bushel		
8 Collothun	=	1 Artata	= 1·809	=	65·753343

Liquids are mostly sold by weight.

WEIGHTS—(Commercial).

Divisions.		*Systematic name.*	*English value.*		*Metric value.*
			Troy Grains		Grammes
	1	Miscal	= 71	=	4·600729
16 Miscals	= 1	Sihr (Seer)	= 284	=	73·611664
			lbs. av.		
100 Miscals	= 1	Ratel	= 1·0142	=	460·0729
					Kilogrammes
40 Sihrs	= 1	Batman (Maund)	= 6·49142	=	2·94446
100 Batman	= 1	Karwar	= 649·142	=	294·446

The Batman, the chief commercial weight, varies in almost every Province and Town, and that given in the Table is the Batman of Tabreez and Mesched. Its value is commonly taken at 6¾ lbs. av. English, or 3·061753 Kilogrammes.

The Batman-i-Shah is equal to 2 Batmen of Tabreez = 13½ lbs. av. English, or 6·123506 Kilogrammes.

The Batman Rei is equal to 4 Batman of Tabreez = 27lbs. av. English, or 12·2447012 Kilogrammes.

A load for a horse is 40 to 50 Tabreez Batman.

A load for a camel is 60 to 70 Tabreez Batman.

A load for a donkey is 15 to 25 Tabreez Batman.

The Tehraun Rih contains 1600 Miscals, and the Karwar is 25 Rih.

WEIGHTS FOR GOLD AND SILVER.

Divisions.		*Systematic Name.*	*English value.*		*Metric value.*
			Troy Grains.		Grammes.
3 Häbbi	= 1	Nahood	= 2·9583	=	·191697
4 Nahoods	= 1	Döng	= 11·83	=	·766788
6 Döng	= 1	Miscal	= 71	=	4·600729
2 Miscals	= 1	Dirhem	= 142	=	9·201458

Pearls are weighed by the Abas = 2¼ Troy Grains, or ·1458 Grammes.

Precious Stones are weighed by the Keerat = 5 Troy Grains, or ·32399 Grammes.

ARABIA.

The weights and measures of Egypt are much used in Arabia. The following weights and measures are used at Mocha :—

Divisions.		*English value.*		*Metric value.*
		Inches.		Metres.
1 Covido or Covid	=	19	=	·48258
1 Guz	=	25	=	·63397
1 Kassaba	=	147·6	=	3·74889
		Miles		Kilometres
1 Mile	=	1·219	=	1·96372
1 Farsakh	=	3	=	4·83279
1 Baryd (4 Farsakh)	=	12	=	19·33117

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*	*English weight in rice.*	*Metric weight in rice.*
			lbs. av.	Kilogrammes
	1	Kella (or Mecmeda) =	4·679	= 2·1224
40 Kellas	= 1	Tomand	= 187·17	= 84·899

Mocha value.		*Systematic name.*	*English value.*	*Metric value.*
			Gallons	Litres
16 Vakias	=	1 Noosfia =	·20827	= ·946
8 Noosfias	=	1 Koddi =	1·66622	= 7·57

WEIGHTS—(Commercial).

Divisions.		*Systematic name.*	*English value.*	*Metric value.*
			lbs. av.	Kilogrammes
40 Vakeias	=	1 Maund =	3	= 1·36077
10 Maunds	=	1 Feehsil =	30	= 13·60777
15 Feehsil	=	1 Behaar =	450	= 204·11662

Sometimes the value of the Behaar is taken as 439·445 lbs. av. English, or 199·35 Kilogrammes.

JEWELLERS' WEIGHTS.

Divisions.		*Systematic name.*		*English value.* Troy Grains		*Metric value* Grammes
16 Karats	=	1 Kaffala	=	47·864	=	4·6523
10 Kaffalas	=	1 Vakeia	=	478·642	=	46·523
1½ Vakeias	=	1 Bikh	=	717·963	=	69·7845

JAPAN.

MEASURES OF LENGTH.

Divisions.		*Systematic name.*		*English value* Inches.		*Metric value.* Metres.
10 Ring	=	1 Bu	=	·1195	=	·003036
10 Bu	=	1 Sung	=	1·11954	=	·030362
10 Sung	=	1 Shaku	=	11·954	=	·303626
				Feet.		
3 Shaku	=	½ Keng	=	2·9885	=	·910878
6 Shaku	=	1 Keng	=	5·9772	=	1·821756
				Yards.		
60 Keng	=	1 Chu	=	119·812	=	109·305401
36 Chu	=	1 Ri	=	4303·632 or Miles 2·44524	=	Kilometres 3·9349944

Rough Timber is sold by the *Yama-Ken-Zaü*, a measure of 63 *Sung*. The *Keng* used by Carpenters is called *Ken-Zaü*. The *Go-Shaku-Zaü* is a measure of 5 *Shaku*.

The Shaku used in Cloth Measure is equal to 15 English Inches; it is usually called *Kudjirad-Jaku* or whale-bone Shaku, and its divisions and multiples are as follows:—

				English Inches.		Metres.
10 Ring	=	1 Bu	=	·15	=	·00381
10 Bu	=	1 Sung	=	1½	=	·03809
10 Sung	=	1 Shaku	=	15	=	·38099
10 Shaku	=	1 Djoo	=	4 yds. 6 inches	=	3·80993

SQUARE MEASURES.

Divistons		*Systematic name*		*English value* Square Yards		*Metric value.* Square Metres
30 Tsubo	=	1 Is'she	=	119·081747	=	100·33164
						Ares
10 Is'she	=	1 It'tau	=	1190·81747	=	10·033164
10 It'tau	=	1 It'choo	=	11908·1747	=	100·33164

MEASURES OF CAPACITY.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Imperial Pints		Litres
10 Dzoku	=	1 Ke	=	·00003	=	·00001
10 Ke	=	1 Sat	=	·00031	=	·00018
10 Sats	=	1 Sai	=	·00319	=	·00181
10 Sai	=	1 Shaku	=	·03195	=	·01814
10 Shaku	=	1 Goö	=	·32195	=	·18145
10 Goö	=	1 Shoö	=	3·1950	=	1·81456
				Imperial Gallons.		
10 Shoö	=	1 To	=	3·9938	=	18·14567
10 To	=	1 Koku	=	39·93802 or Imp Bushels 4·99225	=	181·45671

WEIGHTS.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Troy Grains.		Grammes
10 Mo	=	1 Ring	=	·5824	=	·0377
10 Ring	=	1 Fung	=	5·824	=	·3779
10 Fung	=	1 Nomme	=	58·24	=	3·7799
4 Nomme	=	1 Riome	=	232·96	=	15·1197
				lb. av.		
40 Riome or 160 Nomme	=	1 King	=	1⅓	=	604·7902

The Riome is used exclusively for weighing drugs.

The smaller Japanese Weights are borrowed from the Chinese Monetary Weights, and the larger ones from the Commercial Weights. The Ring, Fung, and Nomme are identical with the Chinese Li or Cash, Fan or Candaveen, and Tsing or Mace.

The Chinese Tael or Liang is equal to 10 Nomme, the Kin or Catty is identical with the King, and the Picul or Tan is equal to 100 King.

SINGAPORE.

The Weights and Measures of Great Britain are generally used in the purchase and sale of European Goods; but the following Weights and Measures are also in use:—

MEASURES OF LENGTH.

Systematic name.		*English value.*		*Metric value.*
		Inches.		Metres.
Covid (Cloth Measure)	=	18	=	·457191

MEASURES OF SURFACE.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Acre.		Ares.
20 Dschombas	=	1 Orlong	=	1·322	=	53·49741

MEASURES OP CAPACITY.

Liquids, Grain, and Fruit, are sometimes sold by the *Gantang* of 2 Bamboos.

The Gantang = about 1·04 British Imperial Gallon, or 4·725226 Litres.

WEIGHTS. (COMMERCIAL).

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				lbs. av.		Grammes
16 Taels	=	1 Catty	=	1⅓	=	604 79
						Kilogrammes
100 Catties	=	1 Pecul	=	133⅓	=	60·479
40 Peculs	=	1 Koyan	=	5333⅓	=	2419·16

Rice from Siam and the Malayan Archipelago, and Sago and Salt are sold by the Koyan, but Bengal Rice and Corn are sold by the Bag of 2 Imperial Maunds. The Bag is equal to 164⅔ lbs. av., or 74·628448 Kilogrammes.

JEWELLERS' WEIGHTS.

Divisions.		*Systematic name.*		*English value.*		*Metric value.*
				Troy Grains.		Grammes.
		1 Meiam	=	52	=	3·36954
16 Meiams	=	1 Boncal	=	832	=	53·91277
						Kilogramme
20 Boncals	=	1 Catty	=	16640	=	1·07825

JAVA.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches	Metres
	1 Duim	= 1·3	= ·02616
12 Duims	= 1 Foot	= 12·36	= ·31394
	1 Ell	= 27·08208	= ·68781

The Ell and Foot given in the Table are the old Amsterdam Rheinland Foot and Ell, but the old Brabant Ell = 27·3384 English Inches, or ·6944 Mètre, and the English Yard are also used.

MEASURES OF SURFACE.

The Djong of 4 Bahn = 7·0149 English Acres, or 2·8387267 Hectares.

MEASURES OF CAPACITY—(FOR RICE AND GRAIN.)

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		lbs. av.	Kilogrammes.
	1 Sack	= 61·034	= 27·684
2 Sacks	= 1 Pecul	= 122·068	= 55·369
5 Peculs	= 1 Timbang	= 610·3403	= 276·844
6 Timbang or 30 Pecul	= 1 Coyan	= 3662·042	= 1661·066

The Measures of Capacity are really vessels to contain definite Weights. Grain, in large quantities, is sold by the Coyan, and in small quantities by the Timbang. The *Coyan* contains in different places in the Island a variable number of Peculs, thus, at Batavia it contains 27, at Somarang 28, and at Soerabaya 30 Peculs. There is also, for small quantities, a measure called *Gantang:* 5 Gantangs make 1 Measure, and 46 Measures make 1 *Last.* The Kulack contains 7¼ Catties Weight.

MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gallons	Litres.
	1 Kan	= ·32819	= 1·491142
388 Kans	= 1 Leager	= 127·33772	= 578·56309

Liquids are very often sold by Weight. The Leager is a measure for Arrack.

WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		lbs. av.	Grammes
	1 Tael	= ·0848	= 38·4506
16 Taels	= 1 Catty	= 1·356	= 615·210
			Kilogrammes
100 Catties	= 1 Pecul	= 135·6312	= 61·5210
3 Peculs	= 1 Small Bahar	= 406·8936	= 184·5631
4½ Peculs	= 1 Large Bahar	= 1831·0212	= 7474·805

The Dutch Troy lb. of 2 Marks is used in Foreign Trade. The Dutch Troy lb. is equal to 7625 English Troy Grains. The Dutch Commercial lb. is equal to 7576 English Troy Grains.

GOLD AND SILVER WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains.	Grammes.
	1 Real	= 422	= 27·3451
9 Reals	= 1 Dutch Mark, Troy	= 3798	= 246·1066

SUMATRA.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Inches.	Metres.
	1 Tempo	= 4½	= ·114297
2 Tempos	= 1 Junkal	= 9	= ·228595
2 Junkals	= 1 Etto	= 18	= ·457191
		Yards	
2 Ettos	= 1 Hailoh	= 1	= ·914383
2 Hailohs	= 1 Depoh	= 2	= 1·828766
2 Depohs	= 1 Tung	= 4	= 3·657532

PHILIPPINE ISLANDS.

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*English value*	*Metric value.*
	1 Line =	·67725 =	·001962
12 Lines =	1 Pulgada =	·927 =	·023553
12 Pulgadas =	1 Pies =	$11\frac{1}{8}$ =	·282646
3 Pies =	1 Vara =	$33\frac{3}{8}$ =	·847938

The Vara is the chief Measure for Cloth, and 100 Varas are equal to 927083 English Yards. Cotton, and some other Goods, are sold by the English Yard.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gallons	Litres.
	1 Gantah =	·879642 =	3·931
25 Gantahs =	1 Caban =	21·99107 =	98·28

A Caban of Rice weighs about 123 lbs av. English, or 55·7918775 Kilogrammes.

A Caban of Paddy (rice in the husk) weighs about 85 lbs. av. English, or 385553025 Kilogrammes.

MEASURES OF CAPACITY FOR LIQUIDS.

Liquids are measured by the old English Wine Gallon and its subdivisions, for which, see the Article "Cape of Good Hope." Cocoa-nut Oil is measured by the Tinaja of 12 Gallons.

WEIGHTS.

Divisions.	*Systematic name.*	*English value*	*Metric value.*
		Troy Grains	Grammes
	1 Drachma =	55·4765 =	3·5947
8 Drachmas =	1 Onzo =	443·8125 =	28·7583
8 Onzas =	1 Mark =	3550·5 =	230·0666
		lbs. Av.	
2 Marks =	1 Libbra =	1·01442 =	460·1333
			Kilogrammes
25 Libbras =	1 Arroba =	25·36050 =	11·50333
4 Arrobas =	1 Quintal =	101·442 =	46·01333
6 Arrobas =	1 Quintal Macho =	152·163 =	69·01999

The above are the old Spanish Weights (Castilian Standards). In the Wholesale Trade most Goods are sold by the following Weights :—

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains.	Grammes
	1 Tael	= 610·2371	= 39·5427
		lbs. av.	Kilogrammes
16 Taels	= 1 Catty	= 1·3948	= ·63268
100 Catties	= 1 Pecul	= 139·4827	= 63·2683

The Pecul of the Philippine Islands is larger than the Chinese Pecul, and is equal to 5½ Spanish Arrobas. 16 Peculs are commonly reckoned equal to 1 Ton English, although they are really less than 1 Ton by about 8½ lbs. av.; an English Ton being 2240 lbs. av., while 16 Peculs are only equal to 2231·7232 lbs. av.

EGYPT.

(NUBIA, SENAAR, KORDOFAN, AND DORFUR).

MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Metres	Inches
	1 Kirat	= ·02857	= 1⅛
6 Kirats	= 1 Rub	= ·17144	= 6¾
4 Rubs	= 1 Diraâ, Draâ or Pike	= ·18577	= 27
			Yards
4 Diraâs	= 1 Gasab	= 2·74301	= 3

In Egypt the Diraâs in use are of different lengths.

The Diraâ Istambuhli, or Pike of Constantinople, used for measuring Cloth and European Silk = to 26·65404 English Inches, but in Practice it is reckoned at 27 Inches.

The *Belendi Pike* used for measuring Syrian Silks and Native Fabrics = 22·7369 English Inches, or ·5775 of a French Mètre.

The *Endaseh* for measuring Cotton and Linen Goods = 25·13425 English Inches, or ·6384 of a French Metre.

The Nile measure *Pike* or Pic = 21·28773 English Inches, or ·5407 of a French Mètre.

In Nubia the Pike, or Diraâ = 26·65404 English Inches, or ·6775 Mètre.

MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Ares	Acres
400 Sq. Gasab	= 1 Feddan	= 44·591	= 1·1019

This Feddan is the legal one both in Egypt and Nubia, but there are other Feddans in use varying in value. Thus the *Feddan al risach* is equal to 3208 English Square Yards.

MEASURES OF CAPACITY.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
2 Rubba =	1 Queleh =		
2 Queleh =	1 Wehbih =	See below.	
6 Wehbih =	1 Ardeb =		
2 Ardeb =	1 Daribba =		

In Alexandria the Ardeb = 7·4457 British Imperial Bushels, or 271 French Litres.

In Cairo the Ardeb = 4·92461 British Imperial Bushels, or 179 French Litres, but its value is usually taken in round numbers at 5 Imperial Bushels, or about 182 Litres.

In Nubia the Ardeb = 5·00699 British Imperial Bushels, or 182 French Litres, there is also the Mörrhi divided into 12 Mauds, or 216 Selgas, and equal to 7·70306 British Imperial Bushels, or 280 Litres.

In Rosetta the Ardeb divided into 12 Rub, or 48 Kaddah, = 7·8131 British Imperial Bushels, or 284 Litres.

WEIGHTS.

In Egypt the unit of Weight is the Dirhem (Dram or Drachm,) which = 47·6615 English Troy Grains, or 3·0884 Grammes. The Weights are of two classes, viz.: (1) the *Rottolo Weight*, and (2) the *Oka Weight*.

THE ROTTOLO WEIGHTS.

Divisions.	*Systematic Name.*	*Metric value.*	*English value.*
		Grammes	Troy Grains
	1 Dirhem	= 3·0884	= 47·6515
12 Dirhem	= 1 Uckieh	= 37·0608	= 571·9380
			lbs. Av.
12 Uckieh	= 1 Rottolo	= 444·7296	= ·98046
		Kilogrammes	
100 Rottoli	= 1 Cantar	= 44·47296	= 98·0465

The Rottolo given in the Table is the *Government Rottolo*, and is used in Alexandria and Cairo.

The *Rottolo Forforo* of 140 Dirhem ($\frac{7}{10}$ of an Oka,) = ·95323 lbs. av. English, or 432·376 Grammes. 70 Government Rottoli = 72 Forfori Rottoli.

The *common commercial Rottolo* of the Markets of Alexandria and Cairo, containing 105 Dirhems = ·71492 lbs. av. English, or 324·282 Grammes.

The great Rottolo of Alexandria, contains 312 Dirhems, and is equal to 2·12434 lbs. av. English, or 963·5808 Grammes.

The great Rottolo of Cairo, contains 324 Dirhems, and is equal to 2·20604 lbs. av. English, or 1·00064 Kilogrammes.

The Special Commercial Rottolo of Cairo, contains 150 Dirhems, and is equal to 1·02132 lbs. av., or 463·26 Grammes.

The Rottolo Zaidino of 200 Dirhems (= $\frac{1}{2}$ Oka) = 1·361757 lbs. av., or 617·68 Grammes.

The *Rottolo Mina* of 250 Dirhems (= $\frac{5}{8}$ Oka) = 1·7022 lbs. av., or 772·10 Grammes.

The *Rottolo Zauro* of 310 Dirhems (= $\frac{31}{40}$ Oka) = 2·11072 lbs. av., or 957·4040 Grammes.

THE OKA WEIGHTS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Kilogrammes.	lbs. av.
400 Dirhems =	The Common Oka	= 1·23536	= 2·72351
420 Dirhems =	The Commercial Oka	= 1·29712	= 2·85969
412 Dirhems =	The Alexandria Commercial Oka	= 1·27242	= 2·80522

JEWELLERS' WEIGHTS.

Divisions.	*Systematic name.*	*Metric value*	*English value.*
		Grammes	Troy Grains
	1 Kömmhah	= ·04825	= ·74471
4 Kömmhahs	= 1 Kirat	= ·19302	= 2·97884
16 Kirats	= 1 Dirhem	= 3·0884	= 47·6615

The Kirat is the unit of Weight for Precious Stones.

Pearls, *Gold-thread*, and *Raw Silk* are sold by the *Metical*, (also called Mikal or Miskal,) equal to 1½ Dirhems, or 71·4922 English Troy Grains, or 4·6326 Grammes.

TRIPOLI.

MEASURES OF LENGTH.

The Turkish Pike for Silk and Cotton Goods is equal to 26·4168 English Inches, or ·671 Mètre.

The Arabian Dhraa for Ribbons = 19·13 English Inches, or ·483 Mètre.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gallons	Litres
	1 Orbah	= 1·4760	= 6·70618
4 Orbah	= 1 Temen	= 5·9040	= 26·82474
		Imperial Bushels	
4 Temen	= 1 Hueba	= 2·9520	= 107·29899

MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Quarts	Litres
4 Quartucci	= 1 Bozze	= 2·36185	= 2·68274
		Imperial Gallons	
4 Bozze	= 1 Secchie	= 2·36185	= 10·73098
6 Secchie	= 1 Barile	= 14·1711	= 64·3859

These Liquid Measures are used for Wines and Spirits.

The Oil Barile is divided into 6 Arbaias, or 36 Caraffas, each Caraffe being equal to 1·6345 British Imperial Quarts, or 1·78849 Litres.

WEIGHTS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Oz. av.	Grammes
37½ Dirhem	= 1 Uckiah	= 1·076	= 30·504095
		lbs. av.	
16 Uckiah	= 1 Rottolo	= 1·076	= 488·06553
			Kilogrammes
2½ Rottoli	= 1 Oka	= 2·6916	= 1·2201638
40 Oka or 100 Rottoli	= 1 Centner	= 107½	= 48·80655

The Rottolo given in the Table is the common Rottolo.

The great Rottolo contains 720 Dirhems, and is equal to 1·2912 lbs. av., or 585·67863 Grammes.

5 great Rottoli are equal to 6 common Rottoli.

JEWELLERS' WEIGHTS.

Divisions.	*Systematic name.*	*English Value.*	*Metric Value.*
		Grains Troy	Grammes
24 Kharub	= 1 Metical Mumini	= 70·65	= 4·578

The Metical Mumini and Kharub are used in weighing Gold Coin and Jewellery. The Metical Akdesi used in weighing Gold Dust and Gold Bullion is equal to 62·80 Troy Grains, or 4·069 Grammes. 9 Meticals Akdesi = 8 Meticals Mumini.

The Uckiah, with the following subdivisions, is used in weighing Gold Lace, Gold Thread, and Silver :—

Divisions.	*Systematic name.*	*Metric Value.*	*English Value.*
		Grammes.	Troy Grains.
16 Kharub	= 1 Dirhem	= 3·052	= 47·2
10 Dirhems	= 1 Uckiah	= 30·52	= 472

TUNIS.

MEASURES OF LENGTH.

The Pic, Dhraâ, or Pike, is the unit of Measures of Length. There are 3 kinds of Dhraâ in common use, viz.:—

Systematic name.	*Metric Value.* Metres.	*English Value.* Inches.
(1) The Arabian Dhraâ for Linen and Cotton Goods	= ·4883	= 19·2247
(2) The Turkish Dhraâ, for Lace, and Gold and Silver Lace, and Silk Goods	= ·637	= 25·0776
(3) The Dhraâ Endaseh, for Woollen Goods and Cloth	= ·6728	= 26·4888

The Measure of Distance is the *Mil Sah'eli*, or *Mil Sah'ari* equal to 1610·3746 Yards, or ·9149 Mile English, or 1·4725 Kilomètres.

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*Metric Value* Litres.	*English Value.* Imperial Pint.
	1 Sââ	= 2·583	= 1·27426
			Imperial Gallons.
12 Saâ	= 1 Hueba	= 30·996	= 6·8228
			Imperial Quarters
16 Hueba	= 1 Kafis	= 495·936	= 1·7057

MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*Metric Value.* Litres.	*English Value.* Imperial Pint.
	1 Pichoune	= ·2643	= ·4654
4 Pichounes	= 1 Pot	= 1·05718	= 1·86163
			Imperial Gallons
15 Pots	= 1 Escandeau	= 15·859	= 3·49057
4 Escandeaux	= 1 Millérole	= 63·437	= 13·9623

The Millérole and its subdivisions, are used in wholesale business, but for domestic purposes the Liquid Measure in general use is the Mettar, with its divisions as follows:—

Divisions.		*Systematic name.*		*Metric Value.*		*English Value.*
		1 Saá	=	Litres. ·8998	=	Imperial Pint 1·0740
½ Saá	=	1 Koileh	=	4·4·97	=	Imperial Gallons 1·0740
2 Koileh	=	1 Mettar	=	9·7941	=	2·1480
6½ Mettar	=	1 Millerole	=	63·437	=	13·9623

For Oil Measure the Mettar = 4·4372 British Imperial Gallons, or 20·1 Litres. The Koileh = 2·2186 British Imperial Gallons, or 10·08 Litres, and the Saá = 2·2186 British Imperial Pints, or 1·36 Litres. The Mettar of Sussa = 5·546 British Imperial Gallons, or 25·2 Litres.

WEIGHTS.

Divisions.		*Systematic name.*		*Metric Value.*		*English Value.*
		1 Kharub	=	Grammes. ·193	=	Troy Grains 3·0556
16 Kharub	=	1 Derhem	=	3·168	=	48·890625
10 Derhems	=	1 Uckiah	=	31·68	=	488·90625
16 Uckieh	=	1 Rottel Attari	=	506·88	=	lbs. av. 1·1175
100 Rottel Attari	=	1 Cantar Attari	=	Kilogrammes 50·688	=	111¾

The Cantar Attari given in the Table is the *common* Cantar Attari, and is used for Iron, Lead, Copper, Tin, Silver, and Gold.

The Cantar Attari for Raw Cotton = 110, and for Cotton Yarn 150 Rotteli Attari.

The *Rottel Saki* contains 18 Uckieh, and is used for Oil, Soap, Ghee, Olives, Honey, Wood, Coals, and Fruit. It is equal to 1·2532 lbs. av. English, or 568·445 French Grammes.

The *Rottel Ghaddari* used for Herbs and Vegetables, contains 20 Uckieh, and is equal to 1·4098 lbs. av. English, or 639·453 Grammes.

The Uckiah, Derhem, and Kharub, are used for Gold, Silver, and Jewels.

ALGERIA.

The Weights and Measures are the same as those of France, the Mètric System having come into use in 1845. (See France.)

MOROCCO.

MEASURES OF LENGTH.

Divisions.		*Systematic name.*		*Metric Value*		*English Value.*
				Metres.		Inches.
		1 Tomin	=	·07806	=	2·81025
8 Tomin	=	1 Dhra'a	=	·6245	=	22·482

MEASURES OF CAPACITY.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres.		Imperial Gallons
		1 Muhd	=	3½	=	3·08135
4 Muhds	=	1 Saâ	=	14	=	12·32541

Oil is sold by the Kula, which weighs 22 Rotal, (of Morocco,) and is equal to about 3·335565 British Imperial Gallons, or 15·155 Litres.

Other Liquids are sold by Weight.

WEIGHTS.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Grammes.		Troy Grains
		1 Uckiah	=	25·40121	=	392
						lbs. av.
20 Uckieh	=	1 Rotal or Artal	=	508·02416	=	1·12
				Kilogrammes.		
100 Rotales	=	1 Kintar	=	50·802416	=	112

The Kintar given in the Table is the common *Kintar*.

The *Great Kintar* (for Meat, Butter, Oil, and Soap,) containing 125 Rotàles, is equal to 140 lbs. av. English, or 63·50302 Kilogrammes.

The *Salle Rabat Kintar*, containing 150 Rotales, is equal to 168 lbs. av. English, or 76·203624 Kilogrammes.

The *Zoll Kintar*, being the weight of 1680 old Spanish Silver Dollars, is equal to 99·895 lbs. av. English, or 45·3116227 Kilogrammes.

ABYSSINIA.

MEASURES OF LENGTH.

The Chief Measure of Length is the Turkish *Pike* = 27 Inches English, or ·686 Mètre. (See Turkey.)

MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.		*Systematic name.*		*Metric value.* Litres.		*English value.* Imperial Pints
12 Dirhems	=	1 Uckieh	=	·0366	=	·0645
12 Uckiehs	=	1 Madega	=	·440	=	·7747
10 Madegas	=	1 Ardeb	=	4·40	=	7·7473

The above is the Ardeb of Gondar. The Ardeb of Massowah contains 24 Madegas, and is equal to about 2·3242 British Imperial Gallons, or 10·56 Litres.

The Kuba = 1·7888 British Imperial Pints, or 1·0159 Litre.

WEIGHTS.

Divisions.		*Systematic name.*		*Metric value.* Grammes		*English value.* Troy Grains
		1 Dirhem	=	2·5919	=	40
10 Dirhems	=	1 Wakih	=	25·9191	=	400
12 Wakihs	=	1 Rotolo	=	311·033	=	4800

The *Mocha* is a weight containing 12 Dirhems, and equal to 480 Grains, or 1 oz. Troy English, or 31·1033 Grammes.

WEST COAST OF AFRICA.

In the British settlements of *Bathurst*, *Fort James*, *Gold Coast*, *Sierra Leone*, and *Cape Coast Castle*, the British Weights and Measures are used.

MEASURES OF CAPACITY.

The *Ardeb* is the chief Measure of Capacity for Dry Goods. The *Gondar Ardeb* contains 10 Madegas, or 120 Uckieh, or 1440 Dirhems, and is equal to about 7.7473 British Imperial Pints, or 4·40 French Litres. The *Massowah Ardeb* contains 24 Madegas, and is equal to about 2·3242 British Imperial Gallons. The *Kuba* is the chief Liquid Measure. It is equal to about 1·7887 British Imperial Pints.

WEIGHTS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Grammes	Troy Grains
	1 Aki	= ·5509 =	7·7304
16 Akis =	1 Usano (or Peso)	= 8·0143 =	123·6875
8 Usanos =	1 Benda	= 64·114 =	989·5

The Kantar for Gum, which is divided into 5 Gamell, is equal to about 19·27109 cwt. English, or 979 Kilogrammes.

Gold is bought and sold by *Usanos*, each of 16 *Akis*. A Usano of Gold is reckoned equal in value to 16000 "Cowries." It contains 314·76 English Troy Grains, or 20·396 Grammes.

EAST COAST OF AFRICA.

(1).—Mozambique—(Sofala.)

The Weights and Measures are the old Weights and Measures of Portugal (See Brazil.)

There is also the common Bahar, divided into 30 Frehsils, and equal to about 240 lbs. av. English, or 108·8622 Kilogrammes. The Frehsil = 8 lbs. av. English, or 3·62874 Kilogrammes.

(II).—Madagascar.

MEASURES OF LENGTH.

The *Refe* = from 1 to 2 Mètres = 39·37079 to 78·74158 Inches English.

WEIGHTS.

The *Monscha* = 6·61398 lbs. av., and the *Satu* = 54·01417 lbs. av. of Husked Rice.

Gold is sold by the Sompi, with the following subdivisions:—

Divisions.		*Systematic name.*		*Metric value.*	*English value.*
				Grammes	Troy Grains.
		1 Nanqui	=	·3186	= 4·917725
2 Nanquis	=	1 Sacare	=	·6373	= 9·83545
2 Sacares	=	1 Wari	=	1·2746	= 19·6709
3 Wari	=	1 Sompi	=	3·824	= 59·0127

(III.)—Bourbon.

The legal Weights and Measures are those of the French Mètric system, (see France); but the Weights and Measures of the "Ancient System" of France are also occasionally used. (See "Ancient System" of France, as given under "Mauritius.")

(IV).—Mauritius.

The Weights and Measures are those of the Metric System (see France).

Up to the year 1876 there were three systems of Weights and Measures in concurrent use, and recognised by law in the Mauritius, namely, the old French, the Metric, and the British Imperial Weights and Measures.

The old French system and the Metric and British Imperial equivalents of the several units are given in the following tables:—

OLD FRENCH MEASURES OF LENGTH.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Millimetres.	Lines.
12 Pointes	= 1 Ligne	= 2·25583	= 1·06575
		Centimetres.	Inches.
12 Lignes	= 1 Pouce	= 2·70699	= 1·06575
		Decimetres.	
12 Pouces	= 1 "Pied de Roi"	= 3·248394	= 12·7893
$3\frac{1}{3}$ Pieds or 44 Pouce	= 1 Aune (of Paris)	Metres 1·18845	= 46·85
			Yards
6 Pieds	= 1 Toise	= 1·94903	= 2·1315
3 Toises	= 1 Perche (of Paris)	= 5·84711	= 6·3945

The Woollen Drapers' Aune was equal to 1·182 Mètre, or 46·53627 English Inches.

The Crown Lands' Perche contained 22 Pieds, and equalled 7·14647 Mètre, or 7·8155 English Yards.

The Provincial Land Measure Perche contained 20 Pieds, and equalled 6·49679 Mètres, or 7·105 English Yards.

The Marine Lieue of 20 to the degree was equal to 5·555 Kilomètres, or 3·4522 Miles English.

The Lieu of 25 to the degree was equal to 4·4444 Kilomètres or 2·7613 English Miles.

The Lieue de poste was 2200 Toises, or 4·28787 Kilomètres, or 2·664402 English Miles.

OLD FRENCH MEASURES OF SURFACE.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Square Metres.	Square Yards
144 Sqr. Pouces	= 1 Sqr. Pied	= ·1055206	= ·1262084
324 Sqr. Pieds.	= 1 Sqr. Perche	= 34·188685	= 40·891541
100 Sqr. Perches	= 1 Arpent	= 3418·868599 Ares. or 34·188685	= 4089·154095 Acre. or ·84484

The Square Perch was of 5 kinds, viz. :—

1. The Paris Foot Measure Square Perche (that given in the Table) of 324 Square Pieds.

2. The Cape Land Square Perche of 484 (22 × 22) Square Pieds, and equal to 61·0848656 English Square Yards, or 51·07198 Square Mètres.

3. The Pennsylvania Land Measure Square Perche of 400 Square Pieds, and equal to 50·48336 English Square Yards, or 42·2025 Square Mètres.

The Arpent, which always consisted of 100 Square Perches, was of three different kinds, according to the value of the Square Perche, viz. :—

1. The Arpent de Paris of 100 Square Perches, each of 324 Square Pieds, which is that given in the Table.

2. The Arpent "Des eaux et des Forêts," otherwise called the "Ordonnance," of 100 Square Perches, each of 484 Square Pieds, and equal to 6108·48656 English Square Yards, or 1·2626 Imperial Acres, or 51·07198 Ares.

3. The Arpent "Commun" of 100 Square Perches, each of 400 Square Pieds, and equal to 5048·336 English Square Yards, or 1·2525 British Imperial Acre, or 42·20825 Ares.

OLD FRENCH MEASURES OF CAPACITY FOR DRY GOODS.

	Systematic name.		*Metric value.*	*English value.*
	1 Litron	=	Litres ·81301	= Imperial Pints 1·431526
=	1 Boisseau	=	13·0083	= Imperial Bushels. ·357881
=	1 Minot	=	39·0249	= 1·073644
=	1 Mine	=	78·0498	= 2·147289
=	1 Setier	=	156·0996	= 4·294578
=	1 Muid	=	1873·1952	= 51·534949

The Setier was of four different kinds, viz. :—

1. The Setier was of 12 Boisseaux (as given in the Table), for Rye, Barley, Flour, Pulse, Seeds, and Lime.

(2) The Setier of 24 Boisseaux, for Oats, equal to 8·58714 British Imperial Bushels, or 312·1991 Litres.

(3) The Setier of 16 Boisseaux, for Salt, equal to 5·72609 British Imperial Bushels, or 208·1328 Litres.

(4) The Setier of 32 Boisseaux, for Wood-charcoal, equal to 11·45218 British Imperial Bushels, or 416·2655 Litres.

OLD FRENCH MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Imperial Pints
2 Chaupines =	1 Pinte =	·9313178 =	1·6398395
2 Pintes =	1 Quart =	1·8626356 =	3·2796791
			Imperial Gallons
4 Quarts =	1 Setier =	7·4505424 =	1·6398395
36 Setiers =	1 Muid =	268·219526 =	59·0342255

OLD FRENCH WEIGHTS.

Divisions.	*Systematic Name.*	*Metric value.*	*English value*
		Centigrammes	Troy Grains
	1 Grain =	5·3114 =	·8197
		Grammes.	
24 Grains =	1 Denier =	1·27473 =	19·674
3 Deniers =	1 Gros =	3·82419 =	59·0234
8 Gros =	1 Once =	30·59411 =	472·1875
8 Onces =	1 Marc =	244·75292 =	3777·5
2 Marc	{1 Livre (Poids de Marc)} =	498·50585 =	lbs. av. 1·079
		Kilogrammes	
100 Livres =	1 Quintal =	48·95 =	107·928

In Gold Assay Weight, the Marc was divided into 24 Carats, and each Carat into 32 Parts.

In Silver Assay Weights, the Marc was divided into 12 Deniers, and each Denier into 24 Grains.

Jewels and Pearls were weighed by Carats, each divided into 4 Grains, the Carat was equal to ·205873 Gramme, or 3·1771 English Troy Grains.

The Square Perche was of 3 kinds, viz. :—

1. The Paris Field Measure Square Perche (that giv
the Table [illegible] Square Pieds.

2. The Cours Lands' Square Perche of 484 (22 *
Square Pieds, and equal to 61·8648656 English Square
or 51·[illegible] Square Metres.

3. The Perrault Land Measure Square Perche
Square Pieds, and equal to 50·48336
Square Yards, or 42·2082 Square Metres.

In like manner, the Arpent, which always consiste
Square Perches, was of three different kinds, accordin
value of the Square Perche, viz. :—

1. The Arpent de Paris of 100 Square Perches, or
Square Pieds which is that given in the Table.

2. The Arpent "Des eaux et des Forêts," other
Arpent [illegible] of 100 Square Perches, e
Square Pieds, and equal to 8105·[illegible] English Sq
or 1·[illegible] Statute Acres, or 51·07198 Ares.

3. The Arpent "Commun" of 100 Square Perc
Square Pieds, and equal to 5048·336 Eng
Yards, or 1·042 Statute Acres, or 42·2082

OLD FRENCH MEASURES OF CAPACITY.

GOODS.

Specific name.	Metric value. Litres
1 Litron	·81301
13 Litrons = 1 Boisseau	= 13·0083
3 Boisseaux = 1 Minot	= 39·0249
2 Minots = 1 Mine	= 78·0498
4 Mines = 1 Setier	= 156·0996
12 Setiers = 1 Muid	= 1873·1953

The Setier was of t[illegible]

(2) The Setier [illegible]

	English value.
	Imperial Gallons
	6·1216
	Imperial Bushels
	2·2956
	3·0608
	30·608

LIQUIDS.

the old Dutch
s follows: -

EASURES.

	English value.
	Imperial Pints
12 =	·833111
25 =	1·66622
	Imperial Gallon
=	·83111
=	8·33111
=	14·9959
=	34·9906
tres	
1455 =	52·485
1794 =	69·981
4·76910 =	104·971
8·5382 =	209·943

about $\frac{1}{8}$th less than the
Imperial Gallons are equal
Wine Gallons into Imperial
Wine Gallon; and to convert
allons, add $\frac{1}{8}$th to the Imperial

CAPE OF GOOD HOPE.

MEASURES OF LENGTH.

The Measures of Length are partly those of Great Britain, (see Great Britain); and partly the old Dutch Measures.

The Amsterdam old Rheinland Fuss = 1·030 English Foot, or ·313937 Mètre, and the Elle = 2·2566 English Feet, are also in use; 4 Elles being reckoned equal to 3 Yards English. A Ruthe is 13, and a Fathom 6 Feet.

MEASURES OF SURFACE.

The old Amsterdam Morgen and the English Acre, are the chief denominations of Surface Measure. 1 Morgen is reckoned equal to 2 English Acres, but the exact value of the Morgen is 2·0087 Acres English, or ·687798 Mètre.

MEASURES OF CAPACITY FOR DRY GOODS.

The Imperial Measures of Great Britain are used to some extent, but the old Winchester Bushel and Quarter, with their subdivisions, and some old Dutch Measures, are those in most general use. They are as follows:—

Divisions.		*Systematic name.*	*Metric value*		*English value.*
			Litres		Imperial Pints
4 Gills	=	1 Pint	= ·55057	=	·969447
2 Pints	=	1 Quart	= 1·10115	=	1·9388
					Gallons
4 Quarts	=	1 Gallon	= 4·40462	=	·969447
2 Gallons	=	1 Peck	= 8·80925	=	1·9388
					Bushels
4 Pecks	=	1 Bushel	= 35·237$_6$	=	·969447
4 Bushels	=	1 Coomb	= 140·948	=	3·8777
			Hectolitres		Quarters
2 Coombs	=	1 Quarter	= 2·81896	=	·969447
5 Quarters	=	1 Wey or Load	= 14·09480	=	4·8472
2 Weys	=	1 Last	= 28·18960	=	9·6944

Approximately, 33 Winchester Bushels or Quarters are equal to 32 Imperial Bushels or Quarters.

Divisions.	*Systematic name.*	*Metric value*	*English value.*
	1 Amsterdam Schepel =	Litres 27·81341 =	Imperial Gallons 6·1216
3 Amsterdam Schepel =	1 Zak =	33·44023 =	Imperial Bushels 2·2956
4 Amsterdam Schepel =	1 Mud or Muid =	111·25364 =	3·0608
10 Mudden	= 1 Last =	1112·5364 =	30·608

Oats and Barley are sold by the Muid.

MEASURES OF CAPACITY FOR LIQUIDS.

The old British Wine and Ale Measures, and the old Dutch Liquid Measures, are those in use. They are as follows:—

OLD BRITISH WINE AND SPIRIT MEASURES.

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Imperial Pints
4 Gills	= 1 Pint =	·47312 =	·833111
2 Pints	= 1 Quart =	·94625 =	1·66622
			Imperial Gallons
4 Quarts	= 1 Pint =	3·785 =	·83111
10 Gallons	= 1 Anker =	37·85 =	8·33111
18 Gallons	= 1 Rundlet =	68·13 =	14·9959
42 Gallons	= 1 Tierce =	158·97 =	34·9906
1½ Tierce or 63 Gallons =	1 Hogshead =	Hectolitres 2·38455 =	52·485
1½ Hogshead or 84 Gallons =	1 Puncheon =	3·1794 =	69·981
2 Hogsheads	= 1 Pipe, Butt or Puncheon =	4·76910 =	104·971
2 Pipes	= 1 Tun =	8·5382 =	209·943

The old British Wine Gallon was about $\frac{1}{6}$th less than the British Imperial Gallon; so that 5 Imperial Gallons are equal to 6 Wine Gallons. To convert Wine Gallons into Imperial Gallons, subtract $\frac{1}{6}$th from the Wine Gallon; and to convert Imperial Gallons into Wine Gallons, add $\frac{1}{5}$th to the Imperial

Gallon. To convert prices per Wine Gallon into prices per Imperial Gallon, add $\frac{1}{5}$th or 20 per Cent. to the price per Wine Gallon, and to convert prices per Imperial Gallon into prices per Wine Gallon, subtract $\frac{1}{6}$th from the price per Imperial Gallon.

OLD BRITISH ALE, BEER, AND PORTER MEASURES.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres		Imperial Pint.
4 Gills	=	1 Pint	=	·5771	=	1·017045
						Imperial Quarts.
2 Pints	=	1 Quart	=	1·1542	=	1·017045
						Imperial Gallons.
4 Quarts	=	1 Gallon	=	4·6209	=	1·017045
9 Gallons	=	1 Firkin	=	41·5881	=	9·153405
2 Firkins	=	1 Kilderkin	=	83·1762	=	18·30681
2 Kilderkins	=	1 Barrel	=	166·3524	=	36·61362
				Hectolitres		
3 Kilderkins	=	1 Hogshead	=	2·495286	=	54·92043
2 Hogsheads	=	1 Butt	=	4·990572	=	109·84086
2 Butts	=	1 Tun	=	9·981144	=	219 68172

OLD DUTCH LIQUID MEASURES.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres.		Imperial Pints.
4 Maatjes	=	1 Pintje	=	·606342	=	1·067625
						Imperial Gallons
2 Pintjes	=	1 Mengel	=	1·212685	=	·266906
2 Mengeln	=	1 Stoop	=	2·425370	=	·533812
8 Stoopen	=	1 Steekan	=	19·402961	=	4·2705
2 Steekanen	=	1 Anker	=	38·805922	=	8·541
4 Anker	=	1 Aam	=	155·223689	=	34·164

The Leaguer = 152 Wine Gallons.

WEIGHTS.

The Weights in use are the Avoirdupois and Troy Weights of Great Britain, (see Great Britain); the old Amsterdam Pfund, of 32 Loth or 128 Drachmen = 1·0893 lb. av. English, or 494·09831 Grammes.

92 old Amsterdam lbs. are reckoned equal to 100 lbs. av. English. There is also the old Dutch Troy Pfund of 2 Marken, 8 Unzen, or 320 Engelsen = 1·08506 lbs. av. English, or 492·175078 Grammes.

BORNEO AND LABUAN.

MEASURES OF LENGTH.

Divisions.		*Systematic name.*		*Metric Value.*		*English Value.*
2 Jankals	=	1 Hasta	=	·45719 Metre	=	18 inches.
2 Hastas / Cubitis	=	1 Ella	=	·91438 ,,	=	1 yard.
2 Ellas	=	1 Depa	=	1·82876 ,,	=	2 ,,

MEASURES OF CAPACITY.

Divisions.		*Systematic name.*		*Metric value.*	*English value.*
2 Pahus, or Bambus	=	1 Chupa	=		
4 Chupas	=	1 Gantang	=		
10 Gantangs	=	1 Para	=		
20 ,,	=	1 Picul	=		
40 Piculs	=	1 Koyan	=		

WEIGHTS.

Divisions.		*Systematic name.*		*Metric Value* Kilogrammes		*English Value.*
16 Taels	=	1 Catty	=	6·1521	=	1·35631 lbs. av.
100 Catties	=	1 Picul	=	61·521	=	135·6312 ,,
40 Piculs	=	1 Koyan	=	2460·840	=	5425·248 ,,

ST. HELENA.

The Weights and Measures are the same as those of Great Britain. (See Great Britain.)

BRITISH NORTH AMERICA.

Under the "Weights and Measures Act, 1873," of Canada, the following is the system of weights and measures:—

MEASURES OF LENGTH.

The "Imperial Yard" (see Great Britain) is the standard measure of length, and its divisions and multiples are as follows:—

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Inch	= 25·39229 Millimetres	= 1 Inch.
12 Inches	= 1 Foot	= 30·471 Centimetres	= 1 Foot.
3 Feet	= 1 Yard	= 91·412 ,,	= 1 Yard.
5½ Yards	= 1 Pole or Perch	= 5·02767 Metres	= 1 Pole or Perch.
22 ,,	= 1 Chain	= 20·11069 ,,	= 1 Chain.
220 ,,	= 1 Furlong	= 201·10695 ,,	= 1 Furlong
1760 ,,	= 1 Mile	= 1·6088 Kilometre	= 1 Mile.

The Chain of 22 yards is divided into 100 Links, and each link is equal to 7·92 inches or ·201106 metre.

In the Province of Quebec the measures of length are the foot, "French measure or Paris foot," equal to 12·79 inches standard measure, the perch equal to 18 French feet, and the "Arpent" of 180 French feet. These measures are used only in territorial measurement; the French measures "Toise" and "Ell" (Aune) are discontinued, and the yard and foot are *used instead* of them.

SURFACE OR SQUARE MEASURES.

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Sq. Inch	= 6·4476 Sq. Centimetres	= 1 Sq. Inch.
144 Sq. Inches	= 1 ,, Foot	= 9·28467 ,, Decimetres	= 1 ,, Foot.
9 ,, Feet	= 1 ,, Yard	= ·83562 ,, Metre	= 1 ,, Yard.
30¼ ,, Yards	= 1 Rod or Perch	= 25·2775 ,, ,,	= 1 Rod or Perch.
40 Perches or 1210 Sq. Yards	= 1 Rood	= 10·11100 Ares	= 1 Rood.
4 Roods or 4840 Yards or 100,000 Sq. Links	= 1 Acre	= ·40444 Hectore	= 1 Acre

In the Province of Quebec the measures of surface for lands originally granted under the Seignorial tenure are the perch of 324 square French feet and the "Arpent" of 32400 square French feet.

CUBIC MEASURES.

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Cub. Inch	= 16·37215 Cub. Centimetres	= 1 Cub. Inch.
1728 Cubic Inches	= 1 ,, Foot	= ·28291 ,, Metres	= 1 ,, Foot.
9 ,, Feet	= 1 ,, Yard	= ·76386 ,, ,,	= 1 ,, Yard.

WEIGHTS.

The "Imperial pound Avoirdupois" is the standard measure of weight, from which all other weights and measures having reference to weight are derived, computed, and ascertained; all weights are parts, multiples, or proportions of it, as follows :—

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
7000 Grains =	1 Pound Avoirdupois	= ·45359 Kilogram.	= 1 Pound.
16 Drams =	1 Ounce ,,	= 28·34954 Grammes	= 1 Ounce.
16 Ounces =	1 Pound ,,	= 453·59 Grammes	= 1 Pound.
100 Pounds =	1 Hundredweight or 1 Cental	= 45·359 Kilogram.	= 100 Pounds.
2000 Pounds =	1 Ton	= 907·18 ,,	= 2000 ,,

The Troy ounce contains 480 Avoirdupois grains, and is the standard measure of weight for gold, silver, platina, and precious stones; and all measures of Troy weight are taken in parts, multiples, and certain proportions of the Troy ounce, and decimal parts and multiples of the Troy ounce for gold, silver, platina and precious stones are legal weights.

MEASURES OF CAPACITY FOR LIQUIDS.

The "Imperial gallon," containing ten pounds weight of distilled water, weighed in air at a temperature of 62 degrees, Fahrenheit, and the barometer standing at thirty inches, is the standard measure of capacity for liquids; all other measures of capacity for liquids are derived, computed and ascertained from the Imperial gallon, and are parts, or multiples or proportions of it, as follows:—

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Pint =	·56771 Litre =	1 Imperial Pint.
2 Pints =	1 Quart =	1·13543 ,, =	1 ,, Quart.
4 Quarts =	1 Gallon =	4·54174 ,, =	1 ,, Gallon.

The old wine gallon of 231 cubic inches was allowed to be used by consent of parties during seven years from the passing of the Act, and the ratio or proportion was fixed at 12 wine gallons for 10 Imperial or standard gallons: the imperial or standard gallon contains 277·27384 cubic inches.

MEASURES OF CAPACITY FOR DRY GOODS.

The "Imperial bushel," containing 8 Imperial or standard gallons, is the standard measure of capacity for commodities sold by dry measure; all other measures of capacity for dry goods are derived, computed, and ascertained from the Imperial bushel, and are parts, multiples, or certain proportions of it.

METRIC SYSTEM.

The same Act provides that no contract or dealing shall be deemed invalid or open to objection, on the ground that the weights or measures expressed or referred to in such contract or dealing are weights or measures of the metric system, or on the ground that decimal sub-divisions of legal weights and measures, whether metric or otherwise, are used in such contract or dealing; and the following table may be lawfully used for computing, determining, and expressing in weights and measures of Canada, weights and measures of the metric *system*:—

ABLE OF METRIC WEIGHTS AND MEASURES, SHOWING HEIR LEGAL EQUIVALENTS IN TERMS OF THE STANDARD WEIGHTS AND MEASURES OF CANADA.

MEASURES OF LENGTH.

tric Denomination and Value.				*Equivalent in terms of the standards of Canada.*		
				Yards.	Feet.	Links.
iriameter of	10000	Meters	=	10939·444444 =	32818·333333 =	49724·74747
ilometer ,,	1000	,,	=	1093·944444 =	3281·833333 =	4972·47474
ectometer ,,	100	,,	=	109·394444 =	328·183333 =	497·24747
ecameter ,,	10	,,	=	10·939444 =	32·818333 =	49·724747
eter ,,	1	,,	=	1·093944 =	3·281833 =	4·972474
ecimeter ,,	$\frac{1}{10}$	,,	=	·109394 =	·328183 =	·497247
ntimeter ,,	$\frac{1}{100}$	,,	=	·010939 =	·032818 =	·049724
illimeter ,,	$\frac{1}{1000}$	,,	=	·001093 =	·003281 =	·004972

MEASURES OF SURFACE.

Metric Denomination and Value.			*Equivalents in terms of the Standards of Canada.*		
			Sq. Metres	Sq. Yards	Sq. Links
Hectare of	100	Ares	= 10000 =	11967·1444 =	247255·0511
Decare ,,	10	,,	= 1000 =	1196·7144 =	24725.5051
Are ,,	1	,,	= 100 =	119·6714 =	2472·5505
Centiare ,,	$\frac{1}{100}$	,,	= 1 =	1·1967 =	24·7255

WEIGHTS.

Metric Denomination and Value.		*Equivalents in terms of the Standards of Canada.*				
		Grams.		Pounds Avoirdupois		Grains Troy.
Millier	=	1000000	=	2204·62125	=	
Quintal	=	100000	=	220·46212	=	
Myriagram	=	10000	=	22·046212	=	
Kilogram	=	1000	=	2·204621	=	
Hectogram	=	100	=	·220462	=	
Decagram	=	10	=	·022046	=	
Gram	=	1	=	·002204	=	15·4323487
Decigram	=	$\frac{1}{10}$	=	·000220	=	1·5432348
Centigram	=	$\frac{1}{100}$	=	·0000220	=	·1543234
Milligram	=	$\frac{1}{1000}$	=	·0000022	=	·0154323

MEASURES OF CAPACITY.

Metric Denomination and Value.	Cubic Metres.	Litres.	*Equivalent in terms of the Standards of Canada.* Imperial gallons.
Kilolitre =	1 =	1000 =	220·2443
Hectolitre =	$\frac{1}{10}$ =	100 =	22·0244
Decalitre =	$\frac{1}{100}$ =	10 =	2·2024
Litre =	$\frac{1}{1000}$ =	1 =	·2202
Decilitre =	$\frac{1}{10000}$ =	$\frac{1}{10}$ =	·0220
Centilitre =	$\frac{1}{100000}$ =	$\frac{1}{100}$ =	·0022

OLD CANADIAN MEASURES OF CAPACITY.

The old Canadian Measures of Capacity were the same as the old British measures for dry goods and for wine and ale, namely, the old British wine gallon and the Winchester bushel, and their divisions are given under the Article "Cape of Good Hope."

The old Canadian gallon (old British wine gallon) had a capacity of 231 Cubic inches, and the capacity of the British Imperial gallon is 277·274 Cubic inches.

The old Paris Minot (of 3 Boisseaux) = to 1·07368 British Imperial Bushel, or 39·0260089 Litres, was sometimes used as a measure of Capacity for Grain.

Fuel wood is sold in Canada by the French cord of 108 cubic feet English, that is 81 inches long, by 48 inches high, by 48 inches broad.

By the Act 22 Vict. Cap 21, the weights equivalent to a Winchester bushel were stated to be as follows :—potatoes, turnips, carrots, parsnips, beet, onions, 60 lbs.; flax seed, 50 lbs.; dried apples, 22 lbs.; hemp seed, 44 lbs.; blue grass seed, 14 lbs.; castor beans, 40 lbs.; salt, 56 lbs.; and malt, 36 lbs.

UNITED STATES OF NORTH AMERICA.

There are two systems of weights and measures in use in the United States of America, namely, the metric system authorised as permissive by the Act passed on the 28th July, 1866,* and the old customary system, or system that was the only one in use prior to 28th July, 1866.

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* Under the Act a set of Standard Weights and Measures of the *Metric System* is supplied to each State in the Union.

METRIC SYSTEM.

The metric system is the same in all respects as that of France (see pp. 147-150).

The following tables may be lawfully used for computing, determining, and expressing in the customary weights and measures of the United States, the weights and measures of the metric system.

COMPARISON OF METRIC AND CUSTOMARY WEIGHTS AND MEASURES OF THE UNITED STATES.

MEASURES OF LENGTH.

Metric Denominations and Values.		*Equivalents in Denominations in use before July, 1866.*
Myriameter = 10,000 Metres	=	6·2137 miles.
Kilometers = 1,000 ,,	=	0·62137 mile, or 3·280 feet and 10 inches.
Hectometer = 100 ,,	=	328 feet and one inch.
Dekameter = 10 ,,	=	393·7 inches.
Meter = 1 ,,	=	39·37 inches.
Decimeter = $\frac{1}{10}$ of a Metre	=	3·937 inches.
Centimeter = $\frac{1}{100}$,,	=	0·3937 inch.
Millimeter = $\frac{1}{1000}$,,	=	0·0394 inch.

MEASURES OF SURFACE.

Metric name.	*Metric value.*	*Equivalents in Denominations in use prior to July, 1866.*
Hectare =	10,000 Square Meters	= 2,471 Acres.
Are =	100 ,,	= 119·6 Square Yards.
Centare =	1 ,,	= 1,550 ,, Inches.

MEASURES OF CAPACITY.

Metric name.	*Metric Value.*	*Equivalents in Denominations that were solely in use prior to 28th July, 1866.*		
		Cub. Metre.	Dry Measure.	Liquid or Wine Measure. Gallons.
Kiloliter or Stere	= 1000 Litres	= 1	= 1·308 Cub. Yards	= 264·17
Hectoliter	= 100 ,,	= $\frac{1}{10}$	= 2 Bushels 3·35 Pecks	= 26·417
		Decimetres		
Dakaliter	= 10 ,,	= 10	= 9·08 Quarts	= 2·6417
				Quart.
Liter	= 1 ,,	= 1	= ·908 ,,	= 1·0567
				Gill.
Deciliter	= $\frac{1}{10}$,,	= $\frac{1}{10}$	= 6·1022 Cubic Inches	= 0·845
		Centimetres.		Fluid Ounce
Centiliter	= $\frac{1}{100}$,,	= 10	= ·6102 ,, ,,	= 0·338
				Fluid Drachm.
Milliliter	= $\frac{1}{1000}$,,	= 1	= ·061 ,, ,,	= ·027

WEIGHTS.

Metric name.	*Metric value.*	*Equivalents in Denominations that were solely in use prior to 28th July, 1866.*	
	Grammes	Weight of what quantity of water at minimum density.	Pounds Avoirdupois
Millier or Tonneau	= 1,000,000	= 1 Cubic meter	= 2204·6
Quintal	= 100,000	= 1 Hectoliter	= 220·46
Myriagram	= 10,000	= 10 Liters	= 22·046
Kilogram or Kilo	= 1,000	= 1 Liter	= 2·2046
			Ounces Avoirdupois
Hectogram	= 100	= 1 Deciliter	= 3·5274
Dekagram	= 10	= 10 Cubic Centimeters	= 0·3527
			Grains Avoirdupois
Gram	= 1	= 1 ,, ,,	= 15·432
Decigram	= $\frac{1}{10}$	= $\frac{1}{10}$ of a Cubic Centimeter	= 1·5434
Centigram	= $\frac{1}{100}$	= 10 Cubic Millimeters	= 0·1542
Milligram	= $\frac{1}{1000}$	= 1 ,, ,,	= 0·0153

OLD OR CUSTOMARY SYSTEM.

MEASURES OF LENGTH, SURFACE, AND SOLIDITY.

The measures of *Length*, *Distance*, *Surface*, and *Solidity*, are the same as those of Great Britain. (See pp. 139—146.)

CUSTOMARY MEASURES OF CAPACITY FOR DRY GOODS.

The Dry Measures of Capacity are the same as those that were in use in Great Britain and Ireland prior to 1st January, 1826, namely, the old Winchester Bushel, having a cubic capacity of 2150·42 Cubic Inches, and its subdivisions and multiples.

The United States standard bushel is a brass measure containing 543391·89 Grains, or 77·6274 lbs. Avoirdupois of distilled water at the temperature of the greatest density of water.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres		Imperial Pint
4 Gills	=	1 Pint	=	·55057	=	·969447
2 Pints	=	1 Quart	=	1·10115	=	1 9388
						Imperial Gallon
4 Quarts	=	1 Gallon	=	4·40462	=	·969447
2 Gallons	=	1 Peck	=	8·80925	=	1·9388
						Imperial Bushel
4 Pecks	=	1 Bushel	=	35·237	=	·969447
				Hectolitres.		
4 Bushels	=	1 Coomb	=	1·40948	=	3·8777
						Imperial Quarters
2 Coombs	=	1 Quarter	=	2·81896	=	·969447
5 Quarters	=	1 Wey or Load	=	14·09480	=	4·8472
2 Weys	=	1 Last	=	28·18960	=	9·6944

CUSTOMARY MEASURES OF CAPACITY FOR LIQUIDS.

(1.) Wine and Spirit Measures.

Divisions.		*Systematic name.*		*Metric value.*		*English value.*
				Litres		Imperial Pints
4 Gills	=	1 Pint	=	·47312	=	·833111
2 Pints	=	1 Quart	=	·94625	=	1·6662
						Imperial Gallons
4 Quarts	=	1 Gallons	=	3·785	=	·333111
10 Gallons	=	1 Anker	=	37·85	=	8·33111
18 Gallons	=	1 Rundlet	=	68·13	=	14·9959
				Hectolitres.		
42 Gallons	=	1 Tierce	=	1·5897	=	34·9906
1½ Tierce or 63 Gallons	=	1 Hogshead	=	2·38455	=	52·485
1⅓ Hogsheads or 84 Gallons	=	1 Puncheon	=	3·1794	=	69·981
2 Hogsheads	=	1 Pipe, Butt, or Puncheon	=	4·7691	=	104·971
2 Pipes	=	1 Tun	=	9·5382	=	209·943

(2.) Beer Measures.

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Litres	Imperial Pints
4 Gills	= 1 Pint	= ·5776	= 1·017045
			Imperial Quart.
2 Pints	= 1 Quart	= 1·1552	= 1·017045
			Imperial Gallons.
4 Quarts	= 1 Gallon	= 4·6209	= 1·017045
9 Gallons	= 1 Firkin	= 41·5881	= 9·153405
2 Firkins	= 1 Kilderkin	= 83·1762	= 18·30681
		Hectolitres.	
2 Kilderkins	= 1 Barrel	= 1·663524	= 36·61362
3 Kilderkins	= 1 Hogshead	= 2·495286	= 54·92043
2 Hogsheads	= 1 Butt	= 4·990572	= 109·84086
2 Butts	= 1 Tun	= 9·981144	= 219·68172

WEIGHTS.

The weights are the same as those of Great Britain (see pp. 139-146); but articles formerly sold by the hundredweight (cwt.) are now almost always sold by the *Quintal* or *Centner* of 100 lbs. av. English.

The Barrel of flour contains 196 lbs. av.; the Barrel of Indian Corn, 178$\frac{4}{8}$ lbs. av.; the Barrel of Pickled Beef or Pork, 200 lbs. av.; and the Hogshead of Indian Meal, 800 lbs. av.

MEXICO.

The weights and measures are the same as those of Spain. 108 Varas = 100 British Imperial Yards. The Carga, of 12 Panegas, each of 12 Almudas; the Quintal of 100 libras = 104 lbs. av. English.

The Weights and Measures are the old Weights and Measures in use in Spain previous to the adoption of the Metric System in that country in 1869. (See Spain, pp. 199-201.)

CENTRAL AMERICA.

The Weights and Measures are the same as those of Mexico.

In British Honduras the British Weights and Measures are *in use.*

WEST INDIA ISLANDS.—(BRITISH.)

The Weights and Measures are the same as those of Great Britain, (see pp. 139-146); and the Measures of Capacity are the old Winchester Bushel, and Wine Gallon with their subdivisions, but the Imperial Gallon and Bushel are now also used. In spite of Legislative enactments and prescribed penalties, great irregularities as to weights and measures still exist (1879).

WEST INDIA ISLANDS—(DANISH.)

The Weights and Measures are those of Denmark. (See p. 206).

WEST INDIA ISLANDS—(SPANISH.)

The Weights and Measures of Spain are also the legal ones for the Spanish West Indies, but the old Spanish Weights and Measures are still used. (See pp. 199-201).

WEST INDIA ISLANDS—(DUTCH.)

The present Weights and Measures of Holland (see p. 202), are being introduced, but the old Amsterdam Weights and Measures referred in the article "Cape of Good Hope," (see p. 302), are still in use.

WEST INDIA ISLANDS—(SWEDISH.)

The Weights and Measures are the same as those of Sweden. (See p. 210.)

WEST INDIA ISLANDS—(FRENCH.)

The Weights and Measures are those of France. (See pp. 147—150).

HAYTI, or ST. DOMINGO.

The Weights and Measures are those at present in use in France, (see pp. 147—150), but the old French Weights and Measures, although prohibited, are still to some extent in use. (See Bourbon, p. 298.)

THE BERMUDAS.

The Weights and Measures are the same as those of Great Britain and Ireland.

UNITED STATES OF COLOMBIA.

VIZ.:

NEW GRANADA, VENEZUELA, and ECUADOR, or QUITO.

The Weights and Measures are the same as those of France, (see pp. 147—150), the Metric system having been introduced in 1857. Previous to that date the old Spanish (Castilian) Weights and Measures were those in use; (see Spain, pp. 199—201) and these are still used to some extent.

BRITISH GUIANA.

The Measures of Length and Surface, and the Weights are the same as those of Great Britain (see pp. 139—146). The Measures of Capacity are the old British Measures (superseded by the Imperial system) quoted in the articles "Cape of Good Hope," and "United States of North America" (see pp. 302 and 310.)

FRENCH GUIANA, or CAYENNE.

The Weights and Measures are those of the "Ancient System" of France, quoted in the article "Bourbon" (see *p.* 298.)

DUTCH GUIANA, or SURINAM.

The present Weights and Measures of Holland are being introduced (see p. 202); but the old Amsterdam Weights and Measures, as given in the article "Cape of Good Hope," are still in use (see p. 302).

BRAZIL.

The Weights and Measures are, with some variations in value and name, those of the old System of Portugal, as follows:—

OLD PORTUGUESE MEASURES OF LENGTH.

Divisions.		*Systematic name.*	*English value.*	*Metric value.*
			Inches.	Metres.
10 Pontos	=	1 Linha or Line =	·091136 =	·0023148
8 Linhas	=	1 Dedo =	·729088 =	·0185185
12 Linhas	=	1 Pollegada =	1·093633 =	·02777
3 Pollegadas	=	1 Palmo =	8·749064 =	·22222
12 Pollegadas	=	1 Pé =	13·1235966 =	·33333
3 Palmos	=	1 Covado =	26·2471933 =	·66666
			Yards.	
5 Palmos	=	1 Vara =	1·215147 =	1·11111
1½ Varas	=	1 Passo Geometrico =	1·8227217 =	1·66666
2 Varas	=	1 Braça =	2·430295 =	2·22222
117⅓ Braças	=	1 Estadio =	285·2357027 =	260·8148
			Miles.	Kilometres
8 Estadios or 9389⅓ Palmos	=	1 Milha =	1·29652 =	2·0865185
3 Milhas, or 2816⅔ Bracas, or 28168 Pâlmos	=	1 Legoa* =	3·88956 =	6·2595

* The Legoa is sometimes estimated at 3,000 Bracas: this would give its value as 7290·887034 yards, or 4·1425 miles English, or 6666⅔ Metres, or 6⅔ Kilometres, but that is more that its real value.

6 English Yards are reckoned equal to 5 Varas, and 3 Yards to 4 Covados. The Pé is $\frac{1}{3}$ of a Metre, and 100 Metres = 148 Covados.

OLD PORTUGUESE MEASURES OF SURFACE.

Divisions	*Systematic name*	*Metric value.*	*English value*
		Square Metres	Square Yards
64 Sq. Pollegadas	= 1 Sq. Palmo	= ·04958271	= ·05906337
25 Sq. Palmos	= 1 Sq. Vara	= 1·23456791	= 1·476584271
4 Sq. Varas	= 1 Sq. Braça	= 4·93827161	= 5·90633708
		Hectares.	Acre.
4840 Sq. Varas	= 1 Geira	= 2·39012345	= 1·476584271

OLD PORTUGUESE MEASURES OF CAPACITY FOR DRY GOODS.

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Gallons	Litres.
2 Salamines	= 1 Oitavo	= ·380794	= 1·7301
2 Oitavo	= 1 Quarto	= ·761589	= 3·4602
		Imperial Bushel	
4 Quartas	= 1 Alqueira*	= ·380794	= 13·841
4 Alqueiras	= 1 Fangas	= 1·523179	= 55·364
		Imperial Quarters.	Hectolitres
15 Fangas	= 1 Moio	= 2·855961	= 8·3046

The Measures of Capacity were not the same for the whole of Portugal. The values given in the table are those of the Lisbon Measures. At Oporto the Moio = 28·173, the Fanga 1·8782, and the Alqueira ·4696 British Imperial Bushels.

100 Moios, Fangas, Alqueiras, &c., of Lisbon, were reckoned equal to 79½ Moios, Fangas, Alqueiras, &c., of Oporto. The Fanga of Oporto was equal to 1·922 British Imperial Bushel, or 69·86 Litres, and its subdivisions and multiples in like proportions. Also 5½ Alqueiras of Oporto were commonly reckoned in practice, equal to 1 Hectolitre, and 16 Alqueiras to 1 British Imperial Quarter.

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* In Madeira 1 Alqueira is equal to ·3877788 British Imperial Bushel, or 14·091 Litres, or 1·018 Alqueira of Lisbon, or two-fifths of an old Winchester Bushel. In the Azores 1 Alqueira is equal to ·3295947 British Imperial Bushel, or 11·98 Litres.

In Rio Janeiro the Alqueira = 40 French Litres, or 1·10048 British Imperial Bushel; and 1 Alqueira of Rio Janeiro is reckoned equal to 3 Alqueiras of Lisbon.

In Bahai the Alqueira is equal to 2½ Alqueira of Lisbon, or ·82536 British Imperial Bushel, 31·142 Litres. The Moio of Sult is only from 18 to 20 Alqueiras.

OLD PORTUGUESE MEASURES OF CAPACITY FOR LIQUIDS.

Divisions.		*Systematic Name.*	*Metric value.* Litres	*English value.* Imperial Pint
		1 Quartilho	= ·34875	= ·61408
4 Quartilhos	=	1 Canada (or Medida)	= 1·395	Imperial Gallons = ·30704
6 Canadas	=	1 Pota, or Cantaro, or Alqueira (of Lisbon)	= 8·37	= 1·84228
2 Potas or Alqueiras	=	1 Almuda*	= 16·74	= 3·68456

The Measures above given were the Lisbon Standards.

The Lisbon Pipa for Oil contained 30 Almudas of Lisbon, and was equal to 110·5368 British Imperial Gallons, or 5·022 Hectolitres.

In Oporto the Almuda = 5·58266 British Imperial Gallons, or 25·365 Litres; and 66 Almudas of Oporto = 100 Almudas of Lisbon.

WINE MEASURE.

Old Portuguese value.		*Systematic name.*	*Metric value* Hectolitres	*English value.* Imperial Gallons
18 Almudas	=	1 Barril (of Wine)	= 3·0132	= 66·32208
26 Almudas	=	1 Pipa	= 4·353	= 95·798
2 Pipas	=	1 Tonelada	= 9·706	= 191·596

The above were the Lisbon Standards.

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* In Madeira the Madeira Wine-pipa is equal to 23½ Madeira Almudas, or about 91⅔ British Imperial Gallons.

In Oporto the Wine Pipa contained 21 Almudas of Oporto, and was equal to 117·236 British Imperial Gallons, or 5·32665 Hectolitres; and the Oil Pipa likewise contained 21 Almudas of Oporto. In practice 11 Wine Pipas of Lisbon were usually reckoned equal to 9 Wine Pipas of Oporto.

In Rio Janeiro the Medida or Canada = 2·4426 British Imperial Quarts, or 2·66204 Litres. It is equal to about 2 Medidas of Lisbon. The Pipa of Rio Janeiro is 180 Medidas, and = 109·917 British Imperial Gallons, or 479·167 Litres. The Tonelada = 2 Pipas.

In Bahia the Medida = 5½ Medidas of Lisbon = 1·584 British Imperial Gallon = 7·2 Litres.

The Pipa of Rum = 72 Canadas; the Pipa of Molasses and Syrup = 100 Canadas.

In Pernambuco the Canada = 6·056 Litres, or 1·3579 British Imperial Gallon.

OLD PORTUGUESE WEIGHTS—(COMMERCIAL).

Divisions.	*Systematic name.*	*Metric value.*	*English value.*
		Grammes.	Troy Grains.
	1 Oitavo	= 3·5859	= 55·335
8 Oitavos	= 1 Onça	= 28·6875	= 442·687
			lbs. av.
16 Onças	= 1 Arratel	= 459	= 1·01186
		Kilogrammes	
32 Arratels	= 1 Arroba	= 14·688	= 32·37952
4 Arrobas	= 1 Quintal	= 58·752	= 129·51808
13⅓ Quintals or 54 Arrobas	= 1 Tonelada	= 793·152	= Cwt. 15·61155

There is also the Quintal of 100 Arratels = 101·186 lbs. av., or 45·900 Kilogrammes. Ships' freight is reckoned by the English Ton, equal to 70 Arrobas.

OLD PORTUGUESE GOLD, SILVER, AND MONEY WEIGHTS.

The unit is the Marco of 8 Oncas, with the following divisions:—

Divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Troy Grains.	Grammes
24 Grãos	= 1 Escrupulo	= 18.480	= 1·1953
3 Escrupulos	= 1 Oitavo	= 55·341	= 3·5859
8 Oitavas	= 1 Onça	= 442·7208	= 28·6875
8 Onças	= 1 Marco	= 3541·7664	= 229·5

Assayers divided the Marco for fine Gold into 24 Quilates, each of 4 Grãos, or into 96 Grãos, each of 8 Oitavos; and for Silver into 12 Dinheros, each of 24 Grãos, that is 288 Grãos.

Wrought Gold was of the fineness of 20¼ Quilates; Gold Dust was reckoned to be of the fineness of from 21¾ to 22 Quilates. Wrought Silver was of the fineness of 10¼ Dinheros.

OLD PORTUGUESE JEWEL WEIGHTS.

Divisions.		*Systematic name.*	*English value.*		*Metric value.*
			Troy Grains		Grammes
4 Grãos	=	1 Quilate	= 3·17645	=	·205782

OLD PORTUGUESE APOTHECARIES' WEIGHTS.

Divisions.		*Systematic name.*	*English value.*		*Metric value.*
			Troy Grains.		Grammes.
24 Grãos	=	1 Escrupelo	= 18·445	=	1·1953
3 Escrupelos	=	1 Oitavo	= 55·335	=	3·5859
8 Oitavos	=	1 Onça	= 442·687	=	28·6875
12 Onças	=	1 Arratel	= 5312¼	=	344·25

The Apothecaries' Arratel = ⅔ths of the Commercial Arratel, so that 4 Apothecaries' = 3 Commercial Arratels.

PERU.

The Weights and Measures are those of the Metric system, (see France), but the old Spanish Weights and Measures (Castilian Standards) are sometimes used. There are, however, the following varieties:—

OLD MEASURES OF LENGTH.

The *Vara* of 3 Pies = ·8475 Mètre = 1·0138 Castilian Varas = 2·78061 Feet English. The *Braza* of 2 Varas or 6 Pies = 1·695 Mètre = 1·85374 English Yard. The *English Yard* is also frequently used.

OLD MEASURES OF CAPACITY.

The Fanega of Wheat weighs from 135 to 140 Castilian Libras, while the Castilian Fanega weighed only 100 Libras. Rice is sold at so much for the weight of an *Arroba*.

In the Measurement of Liquids the *old British Wine Gallon* is frequently used (see the article "United States of North America."

OLD WEIGHTS.

The *Carga* (Quintal Maco) = 6 Arrobas = 150 Castilian Libras; the *Bulto Corriente* = ½ Carga; the Tonnelada = 200 Libras.

CHILI.

The Legal Weights and Measures of Chili are those of the Metric system (see France), that system having been introduced in lieu of the old Spanish (Castilian) Weights and Measures, but these latter are still occasionally used.

OLD MEASURES OF LENGTH.

The Chilian Vara of 3 Pies = 33·367 English Inches = 1·1014 Castilian Varas, or ·8475 Mètre.

108 Old Varas of Chili = about 100 English Yards.

100 Varas = about 93 English Yards.

119 Varas = 100 Mètres.

OLD MEASURES OF SURFACE.

The Quadra was the Square of 150 Varas, and was nearly equal to 4 English Acres.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The Chilian Fanega of White Wheat and Barley = 155 Libras = 1·656 Castilian Fanegas, 90·75 Litres.

The Chilian Fanega of Indian Corn = 160 Libras.

The Chilian Fanega of Potatoes = 200 Libras.

At San Antonio the Fanega of Wheat = 150 Libras.

*At Concep*cion the Fanega of Wheat = 175 Libras.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The Chilian Wine Arroba of 4 Cuartos = 2 Castilian Wine Arrobas = 9 old British Wine Gallons, or 7·7496 British Imperial Gallons, or 35·21 Litres.

OLD WEIGHTS.

The Tonnelada of 20 Quintals; the Quintal of 100 Libras; the Arroba of 25 Libras; the Libra of 4 Cuaterones, each of 4 Onzas, each of 8 Ochavas = 1·00992 lbs. av. English, or 460·093 Grammes.

BOLIVIA.

The Weights and Measures are those of the old Spanish (Castilian) system (see Spain).

ARGENTINE REPUBLIC.

The legal Standard Weights and Measures are those of the Metric system (see France).

The Weights and Measures previously used were as follows:—

OLD MEASURES OF LENGTH.

The *Pie* of 12 Pulgadas, each of 12 Lineas = 11·3652 English Inches = 1·03713 old Castilian Foot = ·28866 Mètre.

The *Vara* of 3 Pies = ·86598 Metre = 2·8413 English Feet = 1·03713 Castilian Varas, the Mètre = 1·155 Argentine Varas = 3·280897 English Feet, and the English Yard, which was often used, was equal to 1·056 Argentine Varas, or ·914 Mètre.

The *Braza* of 6 Pies = 5·6826 English Feet.

The *Cuadra* of 150 Varas = 142·065 English Yards, or 129·897 Metres.

The *Legua* of 40 Cuadras or 6000 Argentine Varas = 3·2287 English Miles = 5·196 Kilometres.

OLD MEASURES OF SURFACE.

The Santa Fé *Cuadra Cuadrada* of 22,500 Square Varas = about **4**·173 English Acres, or **168**·7478 Ares.

The *Suerta de estancia* of 27,000 Square Varas = **5**·004 English Acres, or **202**·49687 Ares.

The *Suerta de Chacra** of 10,000 Square Varas = **1**·8533 English Acre, or **74**·9988 Ares.

One Square Yard English = **1**·11513 Square Argentine Vara.

One Square Leagua = **6671**·68236 Acres English.

OLD CUBIC MEASURES.

One Argentine Cubic Vara = **39636**·4738 English Cubic Inches.

OLD MEASURES OF CAPACITY FOR DRY GOODS.

The *Fanega* of 4 Cuartillas, or 9856 Cubic Pulgadas = **2**·50365 old Castilian Fanegas = **137**·2 Litres = **3**·77464 British Imperial Bushels. The Santa Fé Fanega was equal to **1**·83 Buenos Ayres Fanega or **6**·467 British Imperial Bushels. The *Last* of 2 Toneladas, or 4 Cahices, or 15 Fanegas = **7**·07745 British Imperial Quarters, or **20**·58 Hectolitres. The Cuartelle = ·94366 British Imperial Bushel, or **34**·3 Litres.

OLD MEASURES OF CAPACITY FOR LIQUIDS.

The unit of Liquid Measures was the *Frasco*, of the capacity of 170$\frac{5}{8}$ Cubic Pulgadas, and equal to **2**$\frac{3}{5}$ Litres, or **4**·18182 British Imperial Pints. Its divisions and multiples were as follows :—

---

* There were three varieties of the Suerta de Chacra, viz· :—(1) That containing 10,000 Square Varas used for measuring cultivated land in the country. (2) That containing 19,600 Square Varas, used for measuring cultivated land near towns. (3) That containing 25,000 Square Varas, used for measuring waste land in the Prairies.

Old Argentine value.		*Systematic name.*		*English value*		*Metric value.*
				Imperial Pints.		Litres.
2 Ochavos	=	1 Cuarto	=	·13068	=	·074318
2 Cuartos	=	1 Medio	=	·26136	=	·148437
2 Medios	=	1 Frasco	=	·52273	=	·296875
8 Frascos	=	1 Caneca	=	4·18182	=	2·375
				Imperial Gallons		
4 Canecas	=	1 Barrile	=	2·09091	=	9·5
6 Barriles	=	1 Pipa	=	12·54549	=	57

The Old British Wine Gallon equal to ·833111 British Imperial Gallon, or 3·785 Litres, was also used, and 2 such Gallons were reckoned equal to 3 Frascos.

The Pipa is also divided into 4 Cargas, each of 4 Cortans, each of 12 Frascos.

OLD COMMERCIAL WEIGHTS.

Divisions.		*Systematic name.*		*English value*		*Metric value.*
				Troy Grains		Grammes
		1 Grano	=	·76922	=	·0498
36 Granos	=	1 Adarme	=	27·69211	=	1·7944
16 Adarmes	=	1 Onza	=	443·07375	=	28·7105
				lbs. Av.		
16 Onzas	=	1 Libra	=	1·01274	=	459·3673
						Kilogrammes
25 Libras	=	1 Arroba	=	25·3185	=	11·48418
3 Arrobas	=	1 Quintal	=	101·274	=	45·93673
				Cwt.		
20 Quintals	=	1 Tonelada	=	19·691	=	918·7346

OLD WEIGHTS—GOLD, SILVER, AND ASSAYERS.

For Gold and Silver the Marco of 8 Onzas = 3544·59 Troy Grains, or 229·684 Grammes.

Assayers divided the Marco for Gold into 25 Quilates, each of 4 Granos, and each Grano of 8 Partes; and for Silver, into 12 Dineros, each of 24 Granos.

OLD APOTHECARIES' WEIGHTS.

The Apothecaries' Libra was ⅘ths of the ordinary Libra, and was subdivided as follows :—

Argentine value.		*Systematic name.*		*English value.*		*Metric value.*
				Troy Grains		Grammes
		1 Grano	=	·76922	=	·04955
12 Granos	=	1 Ovalo	=	9·23070	=	·59469
2 Ovalos	=	1 Escrupelo	=	18·46140	=	1·18932
3 Escrupelos	=	1 Drachma	=	55·38422	=	3·56797
8 Drachmas	=	1 Onza	=	443·07375	=	28·54378
12 Onzas	=	1 Libra	=	5316·885	=	344·5254

EE

URUGUAY.

The Metric system of Weights and Measures (see France) was introduced in 1864. Previously the Weights and Measures were the Castilian Standards of the old Spanish system, (see Spain, also Argentine Republic) with some slight variations in name and value, as follows:—

MEASURES OF LENGTH.

The Vara of 3 Pies = 2·9049 English Feet, or ·860 Metre = 1·0288 old Castilian Vara = ·90307 of the Vara of Buenos Ayres.

The Pies = 11·6196 English Inches, or ·286 Metre.

100 Varas of Uruguay = 96·83 English Yards.

MEASURES OF CAPACITY FOR DRY GOODS.

The Fanega of 4 Cuartillos = 132·4026 Litres = 3·64264 British Imperial Bushels.

MEASURES OF CAPACITY FOR LIQUIDS.

The Pipa of 6 Barriles, each of 4 Canceas, each of 8 Frascos, each of 2 Medios, or 4 Cuartos, or 8 Ochavos, is equal to 106·638208 British Imperial Gallons, or 484·48 Litres.

15 Pipas of Montevideo = 16 Pipas of Buenos Ayres.

100 Frascos of Montevideo = 113·3 Frascos of Buenos Ayres.

WEIGHTS.

The Weights are the same as the old Weights of the Argentine Republic.

PARAGUAY.

The Weights and Measures are the same as those used in the Argentine Republic previous to the introduction of the Metric system.

THE FALKLAND ISLANDS.

The Weights and Measures are the same as those of Great *Britain.*

APPENDIX I.

GREECE.

The old system of currency, which was adopted on the Accession of King Otho, in 1833, and which continued to be used to the year 1872, was based upon the double standard of gold and silver and upon the decimal system. It was as follows:—

1 Lepton = $\frac{1}{2}\frac{7}{0}\frac{}{0}$d. English.
100 Lepta = 1 Drachma = 8½d. ,,

The coins, except the copper, were principally minted at Münich and Paris. They were the following:—

	Weight in Grammes.	Fineness.	Alloy.	English value.
				£ s. d.
GOLD COINS:—				
40 Drachmai	11·553	$\frac{9}{10}$th gold	$\frac{1}{10}$th copper	1 8 4
20 ,,	5·776	,, ,,	,, ,,	0 14 2
SILVER COINS:—				
5 Drachmai	22·385	$\frac{9}{10}$ths silver	$\frac{1}{10}$th copper	0 3 6½
1 Drachma	4·477	,, ,,	,, ,,	0 0 8½
½ ,,	2·238	,, ,,	,, ,,	0 0 4¼
¼ ,,	1·119	,, ,,	,, ,,	0 0 2⅛
COPPER COINS:—				
10 Lepta	12·99	Pure copper	No Alloy.	0 0 $0\frac{1}{2}\frac{7}{0}$
5 ,,	6·495	,, ,,	,,	0 0 $0\frac{1}{4}\frac{7}{0}$
2 ,,	2·598	,, ,,	,,	0 0 $0\frac{1}{1}\frac{7}{0}\frac{}{0}$
1 Lepton	1·299	,, ,,	,,	0 0 $0\frac{1}{2}\frac{7}{0}\frac{}{0}$

The silver Drachma contained 4·029 grammes of pure silver, and ·448 grammes of alloy (copper). The 5 dracmai piece contained 20·147 grammes of pure silver and 2·238 grammes of alloy.

The half drachma piece contained 2·015 grammes of pure silver and ·223 grammes of alloy.

The quarter drachma piece contained 1·007 grammes of pure silver, and ·112 grammes of alloy.

The 20 Drachmai piece (gold) contained 5·199 grammes of pure gold, and ·577 grammes of alloy (copper.)

The 40 Drachmai piece contained 10·398 grammes of pure gold, and 1·155 grammes of alloy.

Not more than $\frac{1}{50}$ (or 2 per cent.) of the amount of any debt or account could be paid in copper coins.

Only about £40,000 worth of this money was coined, namely, £4,000 gold and £36,000 in silver, and this being inadequate for currency requirements a Government tariff, at a fixed rate, in drachmai and lepta for the gold and silver coins of most countries was established. The tariff was based on the intrinsic value of the various coins, according to an analysis made in Munich. When the Mexican and South American dollars began to supersede the Spanish pillar dollars in the Ionian Islands, they were likewise added to the coins contained in the Government tariff; and until the 1st (13th) August, 1876, the silver currency of Greece consisted almost entirely of Mexican and German dollars, with Zwanzigers and Greek copper for small coins.

The notes of the National Bank of Greece constitute the chief currency of the country, and in the Ionian islands the notes of the Ionian Bank form the chief medium of payment.

To escape the perplexities of payments in the coins of several countries, Greece joined the Latin Monetary Union, in 1868. By Royal decree of 29th March (10th April) 1876, it was settled that, after 1st (13th) August, 1876. no silver coins, except those of the States of the Latin Monetary Confederation, would be received at the public treasuries and custom houses of Greece, and an import duty of 10 per cent. was to be levied on all silver coin, excepting that of the nations belonging to the Latin Monetary Union, up to the 1st (13) August, 1876, when the new currency was introduced. The National and Ionian Banks issued the new coins.

From 1876 the only current coins in Greece were those of the countries belonging to the Latin Monetary Union, but for long afterwards the old drachma was used as the money of account both by the Government and the public; 28 old drachmai were equal to 25 new drachmai.

RATES ASSIGNED TO FOREIGN COINS IN THE GREEK GOVERNMENT TARIFF OF 1833:—

	Number of parts of pure metal contained in 1000.	Weight in Grammes. Pure Metal	Alloy	Total.	Greek Value. Drachmai.	Lepta.
Silver Coins.						
French Franc	900	4.500	·500	5.000	1	11·68
French Five Franc Piece	900	22.500	2·500	25.000	5	58·40
English Crown (5 shilling piece of 1816)	925	26,130	2·120	28.250	6	48·50
" Shilling (of 1816)	925	5.226	·424	5.615	1	29·70
" Sixpence (of 1816)	925	2,613	·212	2 807	..	64·85
Russian Silver Ruble (of 1796)	743	17,799	6·156	23.955	4	41·74
" " " (of 1799)	868	18,165	2·762	20,927	4	50·82
" " " (of 1802)	875	18,311	2·616	20,927	4	54·44
" Half Silver Ruble (of 1778)	743	8.919	3·085	12.004	2	21·35
" " " (of 1800)	868	9,083	1·381	10,464	2	25·42
" 20 Copec Piece (of 1767)	750	4.023	1·341	5,364	..	99·84
Spanish Piastre (Colonato)	896	24,176	2 806	26.982	6	..
Half Spanish Piastre " (of 1780)	896	12.088	1·403	13.491	3	..
" " " " (of 1792)	896	11.993	1·392	13,385	2	97·64
Spanish Piastre of 1788-1798	896	24,176	2·806	26.982	6	..
Half Spanish Piastre (of 1778)	896	12,088	1·403	13,491	3	..
" " " (of 1792)	896	11.993	1·392	13.385	2	97·64
German Cnvntn. Thaler (Austrian, Bavarian)	830	23,277	4·768	28.045	5	77·69
Austrian Theresa Thaler	933	23,361	4·684	28,045	5	79·78
German Thaler, 20 Gulden Standard (Zwanziger)	580	3,851	2·788	6,639	..	95·57
Crown of Bavaria and Brabant	868	25,634	3·898	29,532	6	36·19
Venetian Thaler or Ducat of 10 Lire (of 1797)	826	23,691	4·991	28,682	5	87·97
" Lire (of 1800)	236	1,128	3·652	4,780	..	27·99
" " (of 1802)	246	2.012	6·168	4,180	..	49·93
Half Venetian Lire (of 1802)	239	0,978	3·112	4 090	..	24·27
Tuscan Thaler (Franciscone)	913	25.023	2·384	27,407	6	21·02
Roman Thaler of 10 Paoli	906	24,062	2·496	26 558	5	97·18
Bolognese Thaler of 10 Paoli	913	24 151	2 301	26 452	5	99 3)
Neapolitan Thaler of 120 Grani (of 1805)	831	23,063	4 707	27,770	5	72 38
Turkish Giumuh, or Dollar, or Real Medjidie	..	..	..	..	5	20
Gold Coins.						
French 20 Franc Piece (old)	900	5,806	6·456	6,4516	22	33·50
" Napoleon (20 Franc Piece. new)	902	6,899	·750	7,649	26	58 97
English Sovereign, or £ sterling of 20 shillings	916	7,310	·671	7,981	28	12 03
" Half-Sovereign of 10 shillings	916	3.655	·335	3.990	14	6·03
Spanish Quadruple (1772-1786)	893	24 095	2·887	26,982	92	59·09
" Half-Quadruple (1772-1786)	893	12.047	1·444	13,491	46	34·54
" Pistole or ¼-quadrupel (1772-1786)	893	6,023	·722	6,745	23	17·27
" Half-Pistole or ⅛-quadrupel (1772-1786	891	2,981	·365	3,346	11	46·76
" Small Gold Piastre or $\frac{1}{16}$ quadrupel (1772-1786	885	1.551	·202	1,753	5	96·65
Austrian Souverein d'or	911	10,108	·993	11,101	38	88·43
Austrian Half-Souverein d'or	915	5.054	·470	5.524	19	44·22
Austrian and Bavarian Ducat	984	3.397	·005	3,452	13	6·39
Dutch Ducat	979	3.380	·072	3.452	13	·25
Venetian Sequin	997	3,442	·010	3.452	13	24·09
Portuguese Old Dobra of 12800 Reis	915	26,196	2·493	28,689	100	60 00
" *Half-Dobra* of 6400 Reis	915	13,074	1·214	14.288	50	39·98
Turkish Gold Medjidie, or Lira Turca (New)	..	..	..	..	25	.

MONETARY CONVENTION, CONCLUDED AT PARIS, DECEMBER 23rd, 1865, BETWEEN FRANCE, ITALY, BELGIUM AND SWITZERLAND.

A Monetary Convention was concluded at Paris, December 23rd, 1865, between France, Italy, Belgium and Switzerland. It is an agreement between those countries to assimilate their coinage to the monetary system of France, except as regards copper money. The following are the gold and silver coins specified by the Convention:—

GOLD COINS.

Pieces of 100, 50, 20, 10 and 5 Francs.

SILVER COINS.

Pieces of 5, 2 and 1 Francs, and of 50 and 20 Centimes.

The coinage of each of the four countries will be a legal tender in all the others. The old coinage is to be withdrawn from circulation before January, 1869, with the exception of Swiss 2 and 1 Franc pieces, which will be withdrawn by January 1st, 1878. The following is a translation of the Convention:—

"His Majesty the King of the Belgians, His Majesty the Emperor of the French, His Majesty the King of Italy, and the Swiss Confederation, being equally desirous of establishing a more complete harmony between their monetary legislation, to remedy the inconveniences which press upon the communications and transactions between the inhabitants of their respective States in consequence of the diverse value of their coined moneys, and to contribute, by the formation of a Monetary Union, to the progress of uniformity in weights, measures and currency, have resolved to conclude a Convention to that effect, and have named as their Commissioners Plenipotentiary as follows——

"His Majesty the King of the Belgians, M. Frédéric Fortamps, Director of the Bank of Belgium, &c., and M. Krelinger;

"His Majesty the Emperor of the French—M. Marie Louis Félix Esquiron de Parieu, Vice-President of the Council of State, &c.; and M. K. J. Pelouze, President of the Coinage Commission;

"His Majesty the King of Italy—M. Isaac Artom, Councillor of Legation at Paris, and M. V. Pratolongo;

"The Swiss Confederation—M. Kern, Envoy Extraordinary to His Majesty the Emperor of the French, and M. Feer-Herzog;

"Who, after mutually exhibiting their respective full powers in good and due form, have agreed upon the following Articles:—

"Article 1. Belgium, France, Italy, and Switzerland are constituted a Union as respects the Weights, values, form, and currency of their respective coinages in gold and silver. No change is made at present in the legislation relating to the copper money of each of the States.

"Article 2. The high contracting parties engage not to coin nor allow to be coined, bearing their impressions and designs, any gold moneys in any other forms than those of gold pieces of 100f., 50f., 20f., 10f., 5f., fixed as to weight, values, allowance for loss, and diameter as follows:—

Nature of Pieces. Francs.	Full Weight. Grammes.	Allowance in Weight at home and abroad. Thousand Parts.	Standard. Thousand Parts.	Allowance from Standard. Thousand Parts.	Diameter. Millimetres.
100 ..	32258·06	1	900	2	35
50 ..	16129·03				28
20 ..	6451·61	2			21
10 ..	3225·80				19
5 ..	1612·90	3			17

"They shall receive without distinction into their public treasuries gold pieces coined according to the foregoing conditions in one or other of the four States, with the reservation nevertheless, of excluding all coins whose weight shall have been reduced by wear to the extent of ½ per cent. below the allowances mentioned above, or where the stamped impressions shall have become effaced.

"Article 3. The contracting Governments bind themselves not to make, nor allow to be made, silver pieces of 5f., except according to the conditions of weight, standard, allowance, and diameter fixed as follows:—

Full Weight.	Allowance.	Full Standard.	Allowance.	Diameter.
25 grammes	3,000ths	900,000ths	2,000ths	37 millimetres.

They shall mutually receive the said coined pieces into their public treasuries, with the right of excluding those which shall have lost weight by wear to a greater extent than 1 per cent. below the allowance above-mentioned, or where the stamped impression shall have become effaced.

"Article 4. The high contracting parties henceforth shall not manufacture silver pieces of 2f., 1f., 50c., and 20c., except according to the conditions of weight, standard, allowance, and diameter as follows:—

Description.	Full Weight.	Allowance in Weight. Thousand Parts.	Full Standard. Thousand Ports.	Allowance. Thousand Parts.	Diameter. Millimetres
Francs.	Grammes.				
2	10	5	835	3	27
1	5·00				23
0 50	2·50	7			18
0·20	1·00	10			16

"These pieces shall be recast by the Governments that issued them when they shall have become reduced by wear to the extent of 5 per cent. below the above-mentioned allowance, or when their stamped impressions shall have become effaced.

"Article 5. The silver pieces of 2f., of 1f., of 50c., and of 20c. manufactured otherwise than according to the various conditions specified in the foregoing Article shall be withdrawn from circulation before January 1, 1869. This period is extended until January 1, 1878, in respect of pieces of 2f. and 1f. issued in Switzerland by virtue of the law of January 31, 1860.

"Article 6. Silver pieces manufactured according to the conditions of Article 4 shall have legal currency among private individuals in the State which has manufactured them to the extent of 50f. in a single payment. The State which has issued them shall receive them from its own countrymen without any limit of quantity.

"Article 7. The public treasuries of each of the four countries shall accept silver moneys coined by one or several of the other contracting States, in conformity with Article 4, to the extent of 100f. in each single payment to such mentioned treasuries.

"The Governments of Belgium, France, and Italy shall receive upon the same terms until January 1, 1878, the Swiss pieces of 2f. and 1f. issued by virtue of the law of the 31st of January, 1860, and which are assimilated in all respects during

the same period to pieces manufactured in accordance with the conditions of Article 4. The reservation in respect of wear mentioned in Article 4 applies in all cases.

"Article 8. Each of the contracting Governments undertake to receive back from individuals or from the public treasuries of the other States the old coinage which it has issued, and to exchange it for an equal value in current coin (gold pieces or five-franc pieces in silver), upon condition that the sum presented for exchange shall not be less than 100f. This obligation shall be prolonged for a period of two years from the date of the expiration of the present Treaty.

"Article 9. The high contracting parties shall not issue silver pieces of 2f., of 1f., of 50c., and of 20c. struck according to the conditions mentioned in Article 4 beyond the ratio of 6f. in value for each inhabitant. This amount, upon the basis of the last census in each State, and reckoning the presumed increase of population until the expiration of the present Treaty, is fixed thus:—

	Francs.
For Belgium	32,000,000
For France	239,000,000
For Italy	141,000,000
For Switzerland	17,000,000

"Taken on account of the sums above mentioned which the Governments have the right to stamp of the values already issued:—

"By France, in virtue of the law of the 25th of May, 1864, in pieces of 50c. and 20. for about 16 millions.

"By Italy, in virtue of the law of the 24th of August, 1862, in pieces of 2f. of 1f., of 50c., and of 20c., for about 100 millions.

"By Switzerland, in virtue of the law of the 31st of January, 1860, in pieces of 2f. and 1f. for 10,500,000 francs.

"Article 10. The date of coinage shall hereafter be stamped upon pieces of gold and silver struck in any of the four States.

"Article 11. The contracting Governments shall communicate to each other annually the total amount of their issues of gold and silver coins, their position as to the withdrawal and remelting of the old coinage; all the arrangements and all the administrative documents relating to coinages.

"They shall also give to each other information of all facts which concern the reciprocal circulation of their gold and silver moneys.

"Article 12. The right of acceding to this Convention is reserved to any other State which shall accept its obligations, and which shall adopt the monetary system of the union in whatever relates to gold and siiver specie.

"Article 13. The execution of the mutual engagements contained in the present Convention is subject, as far as may be necessary to the fulfilment of formalities and regulations prescribed by the Constitutional laws of those of the high contracting parties which have determined to obtain their application, and which they bind themselves to do with the least possible delay.

"Article 14. The present Convention shall remain in force until January 1st, 1880. If one year prior to that date notice to determine it shall not have been given (*dénoncée*), it shall remain obligatory in full force for a further period of 15 years, and, in like manner, for further periods of 15 years in the absence of denunciation.

"Article 15. The present Convention shall be ratified, and the ratification thereof shall be exchanged at Paris within the space of six months, or sooner if possible.

"In faith of which the respective Commissioners Plenipotentaries have signed the present Convention, and have affixed to it the seals of their arms.

"Made in four parts at Paris, December 23rd, 1865."

G. HILL, STEAM PRINTER, WESTMINSTER BRIDGE ROAD.

ERRATA.

Page 118, 15th line, for "since the 1st April, 1873, &c.," read "From the 1st April, 1873, to February, 1878, gold was the single metallic standard, the gold one dollar piece of 25·8 grains troy, being the sole unit of value. Under an Act passed in February, 1878, the silver dollar of 412½ grains was made an unlimited legal tender except otherwise especially provided by consent."

Page 137.

TAHITI.

The money is the same as that of France.

Page 119.

Gold Coins when not below the standard of weight and limit of tolerance are a legal tender in all payments without limitation. Both the Gold and the Silver Coins are of the standard fineness of $\frac{900}{1000}$, the alloy of the Gold Coins is copper or copper and silver, and that of the Silver Coins is copper. The alloy of the 5 and 3 Cent Pieces is copper and nickel in the proportion of ¾ copper to ¼ nickel, the alloy of the 1 Cent Piece is 95 of copper to 5 of tin and zinc.

The devices and legends on the coins are as follows:—On one side an impression emblematic of liberty with the word "liberty" and the year of coinage, and upon the reverse the figure of an eagle with the words "United States of America" and "E Pluribus Unum," and a designation of the value of the coin.

On the Gold Dollar and 3 Dollar Piece, the Dime and the 5, 3, and 1 Cent Pieces the figure of the eagle is omitted; and on the reverse of the Silver Trade Dollar the weight and fineness of the coin are inscribed.

P. 271. Read 1 Coyan = 5333⅓.

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